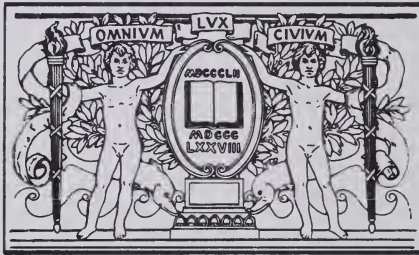


SPIRITUALISM
AND
SIR OLIVER LODGE

CHARLES A. MERCIER

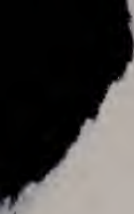


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112

SPIRITUALISM AND SIR OLIVER LODGE

SPIRITUALISM

AND

SIR OLIVER LODGE

BY

CHARLES A. MERCIER

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‘ENTIA NON SUNT MULTIPLICANDA PRÆTER NECESSITATEM’

‘Miracle is not to be presumed until natural causes have been excluded.’
Attributed to William of Ockham, ‘The Invincible Doctor.’

(This aphorism has been known for six hundred years as Ockham’s razor).

Glendower. I can call spirits from the vasty deep.

Holspur. Why so can I; or so can any man;

But will they come, when you do call for them?

—*King Henry IV.* Part I.

THE MENTAL CULTURE ENTERPRISE

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The next^v to be placed among the regiment of fools are such as make a trade of telling or inquiring after incredible stories of miracles and prodigies: never doubting that a lie will choke them, they will muster up a thousand several strange relations of spirits, ghosts, apparitions, raising of the devil, and such-like bugbears of superstition, which the farther they are from being probably true, the more greedily they are swallowed and the more devoutly believed. And these absurdities do not only bring an empty pleasure, and cheap divertisement, but they are a good trade, and procure a comfortable income to such priests and friars as by this craft get their gain.

Erasmus. *Praise of Folly.*

Mem.: For priests and friars read professors and mediums.

PREFACE

SIR OLIVER LODGE'S book *Raymond* was sent to me with a request that I would examine and review it. I found it impossible to do so. The sorrow of a bereaved mother is no fit matter for discussion by strangers in the public press. But the book revealed to me such an astounding mental attitude on the part of its author, that I sent for a previous work of his, *The Survival of Man*, to discover on what ground he, a professor of a certain branch of physical science, and the Principal of a University, speaking with the authority conferred by his occupancy of these positions, could make the assumptions that he does, and promulgate *urbi et orbi* such extraordinary doctrines. I have been engaged for some forty years in the study of the vagaries of the human mind in health and in disease, and am not easily surprised by witnessing new vagaries ; but I must confess that *The Survival of Man* did surprise me. Upon inquiry I found that the doctrines and practices therein advocated have attained a very wide vogue. It may almost be said that they are become the rage. There is nothing very surprising in this, for the pursuit of the occult has for ages prevailed from time to time ; has spread and become fashionable ; its pretensions have been exposed ; and it has died down, only to reappear some years afterwards, when the exposure was forgotten. The fact of its revival at this time did not surprise me ; but the circumstances of the revival did. On matters of taste there can be no disputing, and the taste of Sir Oliver Lodge in publishing the book *Raymond* must be passed over in silence ; but the ' investigations ' and ' experiments ' on which Sir Oliver Lodge's conclusions are founded are fair matters for fair comment. The subject has never engaged my attention before. I come to it as a new-comer, and with an open mind. When I saw the consequences to which the doctrines and practices lead ;

when I read of a table laughing and executing caressing movements ; when I read the drivel that is put into the mouths of dead men who when alive were of normal intelligence ; I began to suspect that the foundation on which this structure was built was insecure. I was prepared to find flaws in it ; I was prepared to find that some assumptions had been made that were not quite warrantable ; I was prepared to find inferences that were not valid when tested by the strict canons of Logic ; but for what I did find I was not prepared. What I found will be described in the following pages.

For a considerable time my mind misgave me. Again and again I put the task aside as not worthy to engage the time that might be occupied in serious studies, and it seemed that such a structure raised on such foundations might well be left to fall to pieces of its own inherent rottenness ; but on consideration of the following arguments advanced by my friends I determined to undertake the task.

In the first place, it was represented to me, and I know from my own medical experience, that the pursuit of the occult, and especially of that form of it that used to go by the name of spiritualism, but is now called telepathy, telergy, and other high-sounding names, leads to a morbid frame of mind, and tends to render those who are at all predisposed to insanity an easy prey to the disease. I am not alone in this opinion. It is held by others who are familiar with cases of this disease. As an instance, I give the following extract from the Annual Report, issued within the last month or two, of Dr. G. M. Robertson, the Superintendent of the Royal Asylum of Morningside, Edinburgh, the premier institution for the insane in Scotland :

SPIRITUALISM : A WARNING

‘ I feel it to be necessary at this time, as the result of several cases that have come under my care, to utter a note of warning to those who are seeking consolation in their

sorrows by practical experiments in the domain of spiritualism. I do not profess to pass any judgment on spiritualism itself, although I have been interested in it for thirty years. I recognize that it is a difficult subject worthy of patient and unbiased inquiry by competent investigators. I do not, however, consider that those who are unversed in normal, and particularly in morbid psychology are qualified investigators, and, least of all, that those who are wishing and longing for and unconsciously expecting certain manifestations from friends they have lost, make reliable observers. .

‘Needless to say, therefore, that I regard the publication of *Raymond* at this psychological moment as much to be deplored.

‘I would remind inquirers into the subject that if they would meet those who are hearing messages from spirits every hour of the day, who are seeing forms, angelic and human, surrounding them that are invisible to ordinary persons, and who are receiving other manifestations of an equally occult nature, they only require to go to a mental hospital to find them. It is true that the modern physician, by a long study of these phenomena, has come to regard them as symptoms of disease, and has renounced the doctrine of possession by spirits, though it had the double merit of simplicity and of antiquity to support it. If honest mediums do exist who hear inaudible messages, or feel communications without words, or see forms invisible to others, the mental physician accustomed to “symptoms” is inclined to regard their “gifts” as being, if not morbid, at least as closely related to the morbid, with no element of anything “occult” about them.

‘I desire to warn those who may possibly inherit a latent tendency to nervous disorders to have nothing to do with practical inquiries of a spiritualistic nature, lest they should awaken this dormant proclivity to hallucinations within their brains. I have known such a person who had lost her son following the procedure in vogue at present, under advice, first hearing of him through

mediums, then getting into touch with him herself and receiving messages from him, some as impressions and others as audible words, then increasing her circle of spiritual acquaintances and living more for her spiritual world than for this, to the neglect of her husband and household, till finally God conversed with her in a low musical voice at all times, and confided His plans for the future to her. I would ask spiritualists where in this case does spiritualism end and mental disorder begin? Do they overlap? Do they coexist? Or is there such a state as disordered mental function at all? Or is it that spiritualism was wholly absent from the case?

‘While inquiries into spiritualism sometimes lead to insanity in the predisposed, I have found more frequently that to persons suffering from the simple forms and early stages of mental derangement the theory of spiritualism has a great fascination. It is simple—a child can understand it—indeed, it is the explanation of the primitive savage for all the actions produced by the mysterious forces of nature. When, therefore, a person suffering from the early symptoms of insanity hears imaginary voices, or experiences strange feelings and impressions, he finds in spiritualism a ready and a comforting explanation of these phenomena, and he becomes interested in the subject. However injurious spiritualism may be to these persons in retarding recovery, it would be wrong to say that it was the cause of their derangement.’

Dr. Robertson, like myself, comes to the matter with an open mind. He has no prejudice against spiritualism. He thinks it worthy of patient and unbiased inquiry; but as an experienced physician he cannot shut his eyes to the pernicious effects it sometimes produces; and it is a fact that cannot be gainsaid that it is those who are not of strong mental constitution or whose mental fibre is weakened by calamity, who are specially attracted to the pursuit of the occult, and are attracted to it in the largest numbers.

This alone seemed to me a sufficient reason for at-

OTHER DISADVANTAGES OF SPIRITUALISM ix

tempting to stem the tide that is sweeping over the country, mainly owing to the influence of Sir Oliver Lodge's books; but this reason does not stand alone. It is saddening to think of the waste of time, energy, and money that are squandered upon these pursuits; of the emotional instability and impressionability that they produce; of the habit they engender of investigating, not to discover the truth, but to bolster up a foregone conclusion; of the perversion and distortion of judgment that follows on the methods employed; of the carelessness of observation and blindness to evidence that they inculcate; of the atmosphere of credulity that they create; of the imposture that they encourage; and of the downright swindling that is so often associated with them. Moved by these considerations, at length I undertook the task. Whether I shall be successful depends on the view that is taken by the public, but at least they will learn from this book that there is another side of the subject, and that on this side there is something to be said. This has hitherto been concealed from them.

Of course I do not hope to make any impression on either Sir Oliver Lodge or on the true believers who regard him as the latter-day Prophet or Pope of a New Religion. Nor do I write for those who have investigated the 'phenomena' and found no reason to place faith in them or to accept the interpretations put upon them by the elect. Between these two there is an immense body of persons who have the subject more or less forced upon their attention by the strenuous propagandism of Sir Oliver Lodge; who think that because an eminent scientific man swallows the thing holus-bolus, it must be worthy of attention and of investigation; who have one side of the matter so persistently and persuasively placed before them that they 'cannot help thinking there must be something in it'; who really desire to arrive at the truth, but are so belaboured with assertions on only one side of the matter that they have no opportunity of ascertaining the truth or of forming a fair and impartial judgment for

themselves. These people are now in the position in which I was before I read *The Survival of Man*. They may perhaps not have the time to read that book with the attention I have given to it : they may perhaps not be as well accustomed as I am to intricate investigations and the weighing of evidence ; and they may be glad of the assistance that a trained logician can give in pointing out what they should attend to and what they may disregard, what is evidence and what is not, what is fact and what is interpretation, what is only evidence and what is proof. I do not ask them to adopt my conclusions : I ask them to adopt my methods, which are the methods that Sir Oliver Lodge also recommends, but does not follow. I do not ask them to adopt my conclusions because I am an eminent scientific man, and therefore must know better than they or anyone else : I ask them merely to bring to bear upon the investment of their belief the same care and common sense that they would bring to bear upon investing their money : to decide this matter by the light of the same reason by which they would decide any ordinary matter of business. If they will do this, the result is not doubtful.

TABLE OF CONTENTS

PREFACE - - - - - v

CHAPTER I

THE CULT OF SPIRITUALISM - - - - - I

CHAPTER II

THE GROUNDS OF BELIEF. EVIDENCE OF SENSE,
EVIDENCE OF REASON - - - - - 22

CHAPTER III

EVIDENCE OF HEARSAY - - - - - 47

CHAPTER IV

EVIDENCE OF HEARSAY (*continued*) - - - - - 66

CHAPTER V

MRS. PIPER - - - - - IOI

SPIRITUALISM AND SIR OLIVER LODGE

CHAPTER I

THE CULT OF SPIRITUALISM

IF we watch a cloud of midges on a summer evening, we shall see that the individual midges pursue their dance without any apparent regard for their fellows beyond what is needed to avoid collision with them. Each midge careers and zigzags about at his own will and pleasure, in and out, up and down, along and across, to all appearance ignoring his fellows in every respect except in keeping out of their way. Yet there is a soul that animates the crowd. There is a common purpose, or a common will, or a common motive amongst them. For though there are no set limits to the swarm, though it has no material boundary, yet it has a boundary that seems to be inescapable. The midges dart hither and thither, up and down, along and across, but, aimless as their movements seem to be, none of them transgresses the limit of the swarm. It remains a well-defined swarm—a single thing. Its boundaries are immaterial, conventional, imaginary; but they are never transgressed. No midge has sufficient daring, sufficient enterprise, originality, or initiative to leave the swarm and wander away in solitude. Though the boundary is only imaginary, yet as soon as it is reached every midge turns away—turns back, or up, or down, or along, and dares not break the midge convention, or leave the company of its fellows. The whole cloud is a single thing animated by a corporate soul. Every now and then the midges are moved by a common impulse, a consentaneous volition, and the cloud as a whole rises or falls, changes its shape, travels a yard or two up stream or down stream,

and still the individual midges pursue their erratic and seemingly aimless dances without any apparent reference to the dances of their fellows ; but consciously or unconsciously they are profoundly influenced by them. Each midge seems independent, but she is not independent. She is governed by impulses, influences, motives, call them what you will, common to her and to her companions. When the whole cloud is rising, many individual midges are diving downwards : yet the cloud rises. When the cloud is falling, many individual midges are soaring upwards : yet the cloud falls. As they are closely alike in nature, so they are similarly acted on by external agents, so they are similarly moved by internal motives.

We see precisely the same thing in a swarm of bees. The individual bees in the swarm tear about at such a prodigious rate that to our eyes they are not mere dots, but are brown lines traversing the air in all directions ; yet the swarm maintains its coherence and its individuality. The individual bees rush about with incredible velocity, and apparently under the influence of ungovernable excitement, but the swarm as a whole moves slowly, steadily, and orderly in a predetermined direction to a predetermined destination, at which it duly arrives, and settles down into a cluster, all the bees being simultaneously moved to cease their erratic and violent movement, and to combine into a motionless mass.

The same kind of common or corporate will appears to actuate other collections of social animals. The sheep in a flock all move together, in the same direction and at the same corporate rate, though they constantly change their positions with respect to one another. When the foremost sheep come to a practicable gap in the hedge, they leap over an obstacle, which may be real or imaginary, and spread out into the adjoining field ; and each subsequent sheep, as he comes in succession to the same spot, makes the same leap, irrespective of whether there is or is not an obstacle to leap over, and then emulates the tranquil demeanour of his predecessors.

Such is the behaviour of social animals. Every animal in a social body, being constituted in the same way as his fellows, is similarly moved by similar internal motives, is acted on similarly by similar external agents. Thus it is with all social animals, and thus it is with man, one of the most social of animals. Men collected into societies are moved at the same time and in the same way by motives common to them all, and by external influences that act upon them all, and thus it is that we witness consentaneous emotions and modes of action passing like a wave over communities of men, engulfing them all in a common feeling, impelling them all to similar action, that is often irrational, often detrimental and even destructive, and which their successors, and perhaps even they themselves, subsequently look back upon with rueful wonder, and marvel that they or their predecessors could have been so mad. Such epidemics of action, whether reasonable or unreasonable, whether beneficial or the reverse, have been the tremendous waves of immigration that brought successive races of men from the shores of the Mediterranean and the interior of Asia to the shores of the Atlantic, the North Sea, and the Arctic Ocean. Such was the great migration of the Huns from the border of China to the field of Chalons. Such were the Crusades, such was the epidemic persecution of witches in the seventeenth century, and many other instances will occur to the well-informed reader, of which the militant suffragette movement is a recent example. As human nature, though it alters in many respects from age to age, yet alters slowly, and in many respects remains the same, we should expect to find, and we do find, that these epidemics of conduct and feeling often repeat themselves in similar form. There have been repeated waves of immigration in Europe, from the South to the North, and from the East to the West. There were repeated Crusades; and though the persecution of witches has not been repeated, other epidemics have been repeated.

Amongst these a conspicuous example is the pursuit of

the occult. Epidemics of it recur with the regularity of epidemics of measles and scarlet fever. Like measles and scarlet fever, it never dies out. Even in times in which it is not conspicuous, it exists endemic in isolated instances, and in remote places ; but, like specific fevers, every now and then it spreads from these foci, becomes epidemic, and affects a very large section of the population. There has never been a time, there has never been a nation or a tribe, in which the pursuit of the occult has not had its votaries, its priesthood, and some sort of organization, often a very elaborate organization. Every savage tribe has its medicine men, who are experts in the study and practice of the occult. The Chaldeans systematized it in the theory and practice of Astrology, which spread into all nations and flourished for thousands of years after the Chaldeans had vanished from the face of the earth. The religion of ancient Egypt was the organized pursuit of the occult. The mysteries of Eleusis represented the occult in ancient Greece. In the Dark and Middle Ages, Magic of various kinds, especially the magic of witchcraft, flourished throughout Europe ; and since witchcraft became discredited, its place has been taken by other pursuits of very much the same nature, by Mesmerism, Braidism, fortune-telling, crystal-gazing, which dates from very early times, spiritualism, mediumism, ghost-culture, and of late years, telepathy and psycho-analysis. Not all of these are wholly impostures, and certainly not all of their practitioners are impostors. There is a basis of truth in hypnotism or mesmerism, for instance ; but in every case, whatever of truth there may be as a basis has been utilized for the purpose of imposture, and the mixture of wilful imposture and self-deception is often so intimate that it is impossible to analyse the blend into its constituent elements.

At the present time, this country, and doubtless other belligerent countries also in some degree, are suffering from an epidemic of spiritualism or mediumism, in the specious form of alleged communications with the dead.

This terrible war has brought bereavement into tens of thousands of families in this country, and desolation into tens of thousands of homes. The sudden severance of the life of one who is near and dear produces in the survivors an irresistible longing for some hope, some encouragement to believe, that the separation is either not eternal or is not complete. To these bereaved and desolate souls the Church gives the comfort that the separation is not eternal, and Sir Oliver Lodge essays to give the comfort that it is not complete.

I refrain from inquiring into the grounds on which the claim of the Church is founded, and I refrain for two sufficient reasons : first that, whether well or ill founded, it has beyond all dispute brought consolation and comfort to innumerable sorrowing people ; and second, because it does not profess to be founded upon reasoning from observed facts, and therefore is not susceptible of examination and testing by the canons of logic. The religious belief is founded upon Faith, upon the dicta of Authority, and these constitute a realm altogether distinct and apart from the induction of conclusions from facts of experience. Sir Oliver Lodge's efforts are of a different kind and have a different result. They have a different result in this respect : that they do not offer, or at least do not convey, a complete and restful assurance on which the mind can repose in tranquillity. They offer a quasi-assurance based upon observation and inferences from observation ; upon observations that can be made only under conditions that are uncertain, fluctuating, capricious, and special ; that have no value—and no meaning until they are interpreted ; that are open to several interpretations, of which those of Sir Oliver Lodge are diametrically opposed to the interpretations of other people ; and even when interpreted by Sir Oliver Lodge himself in the most favourable sense for the purpose of carrying conviction of survival after death, yield nothing but trivialities. The ghosts afford to those who have not yet ' passed over ' such twaddling information as that they live in brick houses with windows ; that

6 SIR OLIVER LODGE'S MENTAL RESERVATION

they wear clothes that they do not like, that they smoke cigars ; and such-like trash. If Sir Oliver Lodge likes to call spirits from the vasty deep to talk such rubbish as this, no one need quarrel with him for thus employing his time ; but when he sets up his faith as a kind of religion ; when he issues his books as serious propaganda ; when these books sell by tens of thousands of copies ; and when it can be stated by a medium on her arrest that half London is concerned in these practices, it is time to subject them to a logical analysis for the purpose of discovering on what basis of reason they rest. For this is the point. This is the gist, the gravamen of the matter. We are called upon to believe these things, not on the ground of faith, but on the ground of reason. The evidence in favour of the creed is placed before us, and we are not only implicitly, but explicitly and formally invited to examine it.

We are invited to examine the evidence and to form our own conclusion ; but we are invited always with the mental reservation that our conclusion must be favourable to the pretensions of the doctrine. If we should arrive at an adverse decision, or even if we should throw doubts upon the validity of the doctrines, we are met, not with argument, not with counter reasons, not with explanations, not with elucidation, but with abuse. In the winter of 1882-3, Dr., now Sir James, Crichton Browne was invited to attend an exhibition of thought reading. He was invited for the expressed purpose of testing the performance and discovering whether it was genuine or not. This was the expressed and ostensible purpose for which he was invited ; but the real purpose was that he should express a favourable opinion which could be published ; for when the performance broke down and failed under the tests which he imposed, the organizer of the show, who then occupied the position of High Priest of Telepathy to which Sir Oliver Lodge has succeeded, could not conceal his ill temper. ' It must be allowed,' said Mr. Myers, ' that this demonstration has been a total failure, and I attribute that to the offensive incredulity of Dr. Crichton Browne.' This

ludicrous ebullition is not merely ludicrous. It is characteristic of the mental attitude of these inquirers who loudly proclaim themselves impartial and unbiased seekers after truth. Sir James Crichton Browne's retort is worth reproducing. 'I hope,' he said, 'I always shall show offensive incredulity when I find myself in the presence of patent imposture.' The story has often been repeated, but it can scarcely be repeated too often, for it is the type and example of the kind of reply that is made when the invitation to make candid and searching inquiry into the genuineness of these phenomena is responded to; and it illustrates and corroborates my assertion that when an inquiry results unfavourably to the doctrines, the inquirer is met, not with explanations or reasons, but with abuse.

Sir Oliver Lodge now occupies the place vacated by the death of Mr. Myers, and Sir Oliver Lodge's method is the same as that of his predecessor. Sir Oliver Lodge deplors 'the dislike and mistrust and disbelief in the validity or legitimacy of psychical inquiry,' but it does not appear that he is anxious for sceptics to witness the occurrences on which he founds his belief. I have not discovered any record of an occasion on which a sceptic was present at one of his own crucial experiments. He does, indeed, complain (*Bedrock*, Oct. 1912) that some distinguished biologists—so distinguished as to be not only F.R.S. but also K.C.B.—should at present shut their minds to phenomena which are occurring in our midst, and of which they might be skilled investigators. The allusion to the F.R.S. and K.C.B. points directly to Sir E. Ray Lankester, who had been mentioned by Sir Oliver Lodge immediately before; but it does not appear that Sir Ray Lankester was ever invited by Sir Oliver Lodge to attend one of his sittings. On the contrary, Sir Ray Lankester replied (*Bedrock*, Jan. 1913), 'I challenged (in a letter to the Press) Sir Oliver Lodge's statement that telepathy had been "discovered." I asked for the demonstration necessary to justify the assertion that telepathy had been discovered. I professed my willingness to investigate this phenomenon

stated to occur in our midst, and its asserted discovery. No opportunity of investigating it has ever been offered to me by those who declare that it exists. I was definitely refused the opportunity of examining the asserted phenomena for which I applied to the Society for Psychical Research.' To this reply Sir Oliver Lodge made no rejoinder, and there the matter rests. If he really desires, as he so frequently and so persistently declares he does, that the matter should be thoroughly and 'scientifically' investigated, it is not easy to understand his neglect to invite Sir Ray Lankester to undertake the investigation; but if he has in his mind the disastrous result of the invitation given to Sir James Crichton Browne, and if he remembers that Sir Ray Lankester was the person who exposed the fraudulent medium Slade, and drove him from the country, then Sir Oliver Lodge's abstaining from giving an invitation to Sir Ray Lankester is not so difficult to understand.

When Sir James Crichton Browne responded to the invitation given to him and exposed the fraud of the mediums, Mr. Myers then and there, by word of mouth, became abusive. Sir Oliver Lodge does not, as far as I can discover from his published records, invite the presence of sceptics, and no doubt has good reasons for his abstinence; but when sceptics comment upon his experiments in a sceptical spirit—and what other comments are to be expected of sceptics?—he also becomes abusive. Since, however, the controversy is conducted not by word of mouth, but in print, with all the mollifying influence of time and of deliberation, the abuse is less pungent and more guarded; but it is still abuse. For instance, Dr. Ivor Tuckett published in *Bedrock* (July, 1912) a very temperate, very careful, and very destructive analysis of a considerable number of the phenomena recorded by the psychical researchers. To this Sir Oliver Lodge replied in the number next but one of the magazine. He had five months in which to think over his reply, and yet he does not confute or attempt to confute any one of the many

instances of fraud, imposture, and absurdity exposed by Dr. Tuckett. He regrets that Sir Ray Lankester has shut his mind to telepathic phenomena ; he declares his earnest desire to welcome all criticism that is well informed and fair ; he discusses the opinions and mental attitude of the late Mr. Podmore ; he talks of ' a superstition of incredulity ' ; he sneers at this, and jeers at that ; he calls Dr. Tuckett's article ' Podmore and water ' ; he says he has personally no complaint to make concerning Dr. Tuckett's treatment of the subject, and yet calls him unfair, and as an example of unfairness he adduces Dr. Tuckett's account of a barefaced swindler whom Sir Oliver Lodge has ' every reason to believe ' was a fraud. It is difficult to see unfairness in this. Throughout his article Sir Oliver Lodge does not traverse one statement of Dr. Tuckett's, and throughout his article he sneers and insinuates unfairness. The article is the equivalent, in print and after ample time for consideration, of Mr. Myers' accusation by word of mouth and on the spur of the moment, of offensive incredulity.

These spiritualistic propaganda, of which Sir Oliver Lodge has made himself the Arch-Priest, have attained a vogue that is very extensive indeed. That it is very extensive is shown in the first place by the enormous sale of the book *Raymond*, a sale that might be envied by the writer of the most popular of popular novels. It is evidenced by the statement made to the police, a statement much exaggerated no doubt, but still one that would scarcely have been made unless it was known that the epidemic is very wide-spread. It is evidenced by the public adhesion of such a representative member of the populace as Sir Conan Doyle. Sir Conan Doyle is, like Mr. H. G. Wells, a writer of very popular and sensational fiction, and now that both of them have gained the ear of the public, they are considered by the public to be authorities on any subject they choose to express their views upon, whether they have studied those subjects or not. A writer of popular fiction finds it useful to have a very wide range of

information, and often possesses a wide range of information ; but accurate learning and a logical faculty of estimating evidence are of not the slightest use in the writing of popular fiction, and any writer of this class who should give up the time and labour necessary to acquire deep and accurate knowledge and the ability of estimating circumstantial evidence would employ that time and labour very foolishly from the point of view of his profession. There is nothing in the published works of Sir Conan Doyle to make us believe that he has acted in this foolish manner, and as evidence of the correctness of Sir Oliver Lodge's doctrines, Sir Conan Doyle's testimony is of no more value than that of any other person who has read *Raymond* and *The Survival of Man* ; but it is of the utmost value as evidence of the prevalence of Sir Oliver Lodge's doctrines. Sir Conan Doyle is an extremely popular writer, and no one can be an extremely popular writer without thoroughly appreciating the point of view of a very large section of the public, sympathizing with it, and sharing it. If, therefore, Sir Conan Doyle thinks it worth while to assert in the most emphatic words that ' further proof is superfluous,' ' the weight of disproof lies with those who deny,' we may be sure that he represents and reproduces in these assertions the opinions of a great many people, probably the opinion of that convenient fiction the average man.

Whether it is a good thing or a bad thing that this opinion should prevail I do not now discuss. All I am at present concerned to show is that in fact it does prevail, and prevail very widely. The business of mediumism was never so brisk as it is to-day. Mediums of every grade and quality are driving a roaring trade. It appears that there is actually an institution calling itself the British College of Psychic Science, which has, it appears, for one of its functions, the provision of mediums ; for one who was recently prosecuted at the West London police court swore that she was paid £50 a month by the College, even if only one sitter visited her. It would be very interesting to know of whom the British College of Psychic Science con-

sists, what its constitution is, who furnishes its funds, and in what proportion, if any, the receipts are divided between the College and its mediums. It would be exceedingly interesting to know how many mediums are in the pay of the College, and whether they are all remunerated at the rate of £50 a month, and, query, a commission on the receipts. This incidental revelation lays bare the objectionable side of mediumism, which is an integral and necessary part of telepathy, clairvoyance, conversations with the dead, and all the rest of spookery. They cannot be carried on without the aid of mediums, and though there is no reason to suspect the honesty of some mediums, yet others have been convicted of the grossest fraud, and many of them work for money, and are therefore under the strongest temptation to deceive, and to produce manifestations by hook or by crook, by foul means if they do not come by fair.

That what may be comprehensively called spiritualism or mediumism, that is to say, the consultation of mediums for the purpose of witnessing supernatural occurrences or receiving supernatural communications, is inordinately prevalent at the present time is certain ; and for this state of things two factors are mainly responsible : the luxuriance of the crop is due first to the preparation of the ground, and second to the skilful sowing of the seed.

How the ground is found ready prepared for the seed has already been indicated. It is prepared by the events of this terrible war. It is the experiences of the war and the effects of the war that have profoundly affected the minds of men and women, and have predisposed them to raise their eyes from the business, the pleasures, the trite occurrences of daily life, and to fix them once more, as men and women in such times of stress and storm have always fixed their eyes, upon the ultimate mysteries. It is in time of trouble, it is in all our troubles and adversities whensoever they oppress us ; it is all those that are in danger, necessity, and tribulation ; it is the fatherless children and widows, and all that are desolate and op-

pressed ; it is those who are any way afflicted or distressed in mind, body, or estate ; it is the sighing of a contrite heart and the desire of such as be sorrowful ; these are the times, these the circumstances, in which recourse is had to spiritualism, mediumism, and all the rest of it ; these are the people who frequent the offices of the mediums, whether sumptuous Persian-carpeted and beflowered apartments in Bond Street, or the dingy antimacassared room over the suburban greengrocer's shop ; and these are the motives that prompt the seekers. In times like the present the ground is but too well cultivated. It is dug, raked and drilled, it is ploughed and harrowed, and it gapes for the seed to be sown. It is in these circumstances that mediumism flourishes, and it is in ground thus prepared that Sir Oliver Lodge sows his seed. It is not to be wondered at that in such conditions, in such ground, the seed germinates and brings forth abundantly.

The second factor is the skilful sowing of the seed. In this Sir Oliver Lodge has been extraordinarily successful. Not even in the days of Home and Slade did mediumism and occultism attain such a vogue as they have attained under the auspices of Sir Oliver Lodge, and the chief reason for his success undoubtedly is that he is a man with an assured position in the world of Science. It is on this account that he speaks with such unimpeached authority, and on this account that his utterances on the question carry such weight and are accepted without hesitation. His position at the head of a University and his long and unblemished career place his honesty above suspicion ; and his achievements in the realm of science seem to preclude the possibility that he can be mistaken in a matter of such importance, to which he has given so much attention, and on which he speaks with such assured certainty.

There is much confusion here. Sir Oliver Lodge's honesty in making himself responsible for the statements in his books is, indeed, above suspicion. No one can doubt that he is himself fully and completely convinced of the genuineness of the events to whose occurrence he testifies ;

but the weight attached to his eminence in a certain field of science has been immensely exaggerated. I am not questioning the fact of this eminence. Sir Oliver Lodge is a Fellow of the Royal Society, a distinction proving that in the opinion of those competent to judge he has made some notable addition to our knowledge. His appointment to the principalship of a University shows that in the opinion of other competent judges he is not a mere narrow specialist, but is a man of wide knowledge and enlightened views. His intellectual attainments are raised as high above cavil as his honesty. Nevertheless, it does not follow that a man even of great eminence in the world of science, or of great intellectual attainments, is competent to judge of such matters as mediumism and spiritualism, or that his utterances on these matters are entitled to any more weight than those of the successful writer of fiction, or the successful vendor of pills. That a man has achieved success in any walk of life entitles him to respect and gives weight to his utterances on any matter directly bearing upon his success, or on any matter knowledge of which was necessary to his success ; but it adds not a featherweight to the importance of his opinion on any other subject. If the successful writer of fiction or the successful vendor of pills were to set his opinion on a matter of electricity against that of Sir Oliver Lodge, we should not hesitate a moment in preferring the opinion of Sir Oliver Lodge ; nor should we hesitate in preferring the opinion of the pill-vendor in a matter of selling pills, or perhaps in selling other commodities ; but when the cobbler leaves his last and gives his opinion on matters that are outside the scope of his speciality, that opinion is of no more value than the opinion of any Tom, Dick, or Harry of equal intelligence.

In these days ' Science ' and ' scientific ' are words to conjure with. They are invested with glamour. They inspire awe. They are like Habakkuk, *capable de tout*. Science, especially when spelt with a capital S, is regarded much as the Black Art was regarded in the Middle Ages. It is invested with mysterious and illimitable power. It

alone worketh great marvels. The wonders of steam, of engineering, of electricity, of photography, of wireless telegraphy, and a thousand more are due to Science. This glamour, this awe, this mystery, this power, are transferred in the minds of the ignorant from Science to workers at science, who are called scientific men, and who are considered to be, like Habakkuk, though in another sense, *capable de tout*. This is a mistake. The minds of men who work at science may be constituted in the same way as the minds of those who work at other things. No doubt, after years of work at any subject, a man's mind becomes, like the dyer's hand, subdued to that it works in. It acquires a special bent, it acquires special facilities; it acquires the power of judging rapidly and accurately of certain matters; but it does not acquire infallibility. It may acquire increased facility and increased reliability of judging matters outside its own speciality; but it does not necessarily do so. On the contrary, exclusive devotion to any study, or to any walk of life, inevitably tends to narrowness, and to inability to judge correctly of matters outside the scope of the daily work; and this is as true and as frequent in workers at science as in workers at anything else.

The mental attitude of those who accept telepathy, and mediumism, and occultism generally, on the authority of Sir Oliver Lodge may fairly be put thus, and has, by a friend of mine, been put in very much these words: 'Sir Oliver Lodge says these things are true; and what a scientific man says on a scientific subject is good enough for me. I myself have no personal experience of them, and if I had, I should not be competent to judge of them; but as a sensible man I must accept the opinion of the expert. No, I shall not suspend my judgment about it. You might as well ask me to suspend my judgment about the revolution of the earth. To me it seems that the sun goes round the earth; but scientific men who are in a position to know tell me that it is not so, and that on the contrary, the earth goes round the sun; and I accept

their assurance. How can I consistently accept the assurance of scientific men in the one case, and reject it in the other? Your attitude seems to me most unreasonable.'

This reasoning is on the face of it extremely plausible, and as it represents the attitude of thousands of people, it demands attentive examination. In order to examine it thoroughly, it will be necessary to investigate the whole subject of the nature and validity of evidence; and this I shall do in the next chapter; but the following preliminary and provisional remarks may be made here. The assumption that underlies the attitude of mind just described is that the evidence of a witness who is honest, and who is in a position to know the fact to which he testifies, ought to be accepted. The principle is sound, and with certain safeguards and certain precautions, it may safely be acted on, and indeed must be acted on if we are to live our lives to the best advantage. The precautions are obvious. We must make sure that the witness is honest, and we must make sure that he really is in a position to know, and does know, the fact of which he testifies. In this case, the first precaution is needless. We need no assurance that the testimony of Sir Oliver Lodge is honest, or that he is testifying to what he really believes to be true. The question is narrowed down to this: Is he in a position to know, and does he in fact know, the things to which he testifies? The mere fact that he is a scientific man, even if he is a scientific man, is not sufficient to settle this question. That Sir Oliver Lodge is a man who works at scientific subjects, and works at them successfully, is of course beyond all question; but there is all the difference in the world between a man who works at scientific subjects and a scientific man. The man who comes round to adjust the telephone or alter the electric light is a man who works at a scientific subject; but it does not by any means follow that he is a scientific man. He may be, and often is, but it does not follow that he is. I am not comparing Sir Oliver Lodge to the journeyman in electrics—I am merely demonstrating that a worker at a scientific subject need

not be a scientific man ; and this is as true in the higher as in the lower branches of working at scientific subjects. By a scientific man we mean a man with a certain habit of mind, and whether or no Sir Oliver Lodge possesses this habit of mind is an important matter to determine, and one that we shall investigate presently. For the present it is enough to say that whether he does or does not possess this habit of mind, it does not follow that we should accept his evidence upon telepathy and so forth as the evidence of an expert in that matter.

That we ought to trust the expert is a sound general maxim, and one that we cannot afford to neglect ; but before we trust him we must make sure that he is an expert on the very subject on which he testifies. My gardener is an expert in the growing of cucumbers. What he does not know about the growing of cucumbers is beyond the reach of discovery ; but I do not accept his opinion on a question of diagnosis of disease in man, or of the artistic merit of a picture, or of the cause of canker in fruit trees, or even of the relationship of cucumbers to melons and gourds. On any subject that is immediately within the range of his speciality I trust him implicitly ; but experience shows that on subjects even a little removed from the range of his speciality his opinion is often quite untrustworthy. And this limitation is not peculiar to my gardener. He shares it with every expert in every subject. It is no disparagement to Sir Oliver Lodge, therefore, to repudiate any claim he may make, or that may be made for him, to authority in matters outside of electricity. Of course it may be said that he is by this time an expert on the subject of mediumism and the occult. Into this we shall examine subsequently. For the present what is insisted upon is that no eminence that he has attained as a man of science, no discoveries that he has made in electricity, no Fellowship of the Royal Society, no Principalship of a University afford us any ground whatever for supposing that he is on these accounts a better judge of occult phenomena or a more competent critic of the performance

of mediums. The regions and methods of inquiry are so distinct and so wide apart that nothing done in the one has any bearing whatever on anything done in the other.

One very extensive region of the mediums' performances is of such a character as to admit of but two alternative explanations. Either the phenomena are produced by supernatural means, or, as Sir Oliver Lodge prefers to call it, supernormal means, or they are produced by conjuring tricks. This is especially the case with the movements of material bodies ; spirit rapping, so called ; table turning ; levitation ; and so forth ; but it is by no means restricted to these performances. There are many others of which it can be said that they are produced either by supernatural means or by conjuring tricks. In every case in which he is unable to detect a conjuring trick, Sir Oliver Lodge pronounces unhesitatingly in favour of the supernatural. It seems never to occur to him that there may be conjuring tricks that he cannot detect, or has not detected. It is obvious that the training and experience of a student of electricity afford no assistance in the detection of conjuring tricks, unless the conjuring tricks are worked by electricity, which I believe is never the case. And even if the tricks were worked by electricity, the professor of electricity would be very apt to overlook this mechanism, for the reason that we find what we look for, what we are prepared and expect to find ; and not even a professor of electricity expects to find conjuring tricks worked by the agent with which he is so familiar. In fact I believe conjuring tricks are never worked by electricity, knowledge of which is now so widespread that the tricks would be in imminent danger of detection. It is obvious to anyone who is not predetermined to find supernatural agency in the performances of mediums, that the only expert who is competent to express a trustworthy opinion on the relative probability of supernatural agency and trickery is an expert in conjuring, and even conjurers, skilled and professional conjurers, are not always able to detect the means by which other conjurers perform their tricks. But

when they are not able to detect the means by which the tricks are performed, do they at once conclude that the tricks are performed by supernatural agency? They do not. They leave this conclusion to professors in electricity and other branches of science, to Fellows of the Royal Society, and such like; and they study the tricks still more intently with the purpose of discovering by what natural means they are performed. In this they are far more scientific in the true and proper sense of this misused word than the professors of this and that branch of science. But supposing a conjurer were to watch a fellow-conjurer and were able to detect some of his tricks and were unable to detect others, and supposing the performer were to say, 'Well, these are clever tricks, but I assure you they are only tricks, and those whose mechanism you cannot understand are just as much tricks as those whose mechanism you have discovered.' Supposing he says this, and his colleague refuses to believe him. Suppose that the observing conjurer says, 'No, my friend, it is all very well for you to say that these impenetrable and mysterious performances are only tricks; but I know better. The others I admit were tricks, for I discovered how they were performed; but these I cannot penetrate. I cannot see how it is possible to perform them by ordinary and natural means, and therefore they *must* be supernatural.' Should we not think the observing conjurer a little unreasonable? Let us suppose that instead of making this confession, the performing conjurer were to produce tricks, some of which were obviously performed by trickery, manifest and proved, and others of much the same character were performed, but the observer did not detect the means of performance. What would be the reasonable attitude of the observer? Should he say, 'Yes, I admit with reluctance that the first set of tricks was produced by natural agency, but I am quite convinced that the second set was supernatural.' This is the attitude taken up by Sir Oliver Lodge towards Eusapia Paladino. Would it not be more reasonable of the observer, especially if he were no conjurer, to say, 'Well,

the first set were tricks, mere tricks, and we know exactly by what simple natural means they were performed. I do not see exactly how the second set were performed, but they were of the same character as the first, and therefore were in all probability produced by much the same means, though I do not at present see what these means were ?

Now suppose the conjurer has an assistant, and that the two jointly conduct a performance very like other performances that are known to be produced by natural means, but these two performers declare that their performance is supernatural. Ought we to accept their assurance that their performance is supernatural, or ought we to doubt ? Sir James Crichton Browne doubted, but Mr. Myers did not doubt. Now suppose that some years afterwards one of these two conjurers owns up, confesses that the whole thing was a hoax, and explains exactly how it was worked ; ought we to believe his confession, or ought we rather to believe that his performance was supernatural ? Ought we to sneer, as Sir Oliver Lodge does, at those who believe the confession, or ought we, if we sneer at all, to reserve our sneers for those who believed in the supernatural character of the original performance ?

There is one test that ought always, I think, to be applied to those performances of mediums that simulate conjuring tricks and yet purport to be produced by supernatural means. This test is as follows : Is the performance that is said to be supernatural more wonderful and less explicable by natural means than the performances of professed conjurers, who avow that their performances are conjuring tricks produced by natural means, and challenge us to discover the means if we can ? As long as the performances of mediums are not more wonderful or more inexplicable than the performances of conjurers, the mediums have no title whatever to demand our belief that their performances are supernatural. I do not say that even if the mediums could perform more wonderful tricks than the conjurers we should be bound to receive the mediums as supernatural agents ; but I say it is incon-

testable to every reasonable being that the less extraordinary performance cannot be ascribed to supernatural agency as long as the more extraordinary performance is ascribed to natural means. Up to the present nothing whatever that is wonderful has been performed by Sir Oliver Lodge's mediums that has not been exceeded in marvellousness by Messrs. Maskelyne and Devant. When the mediums can perform something more marvellous than Messrs. Maskelyne and Devant can, then it will be time enough for the mediums to assert that they have supernatural assistance. Even then they must not expect their assertion to be accepted by reasonable men until their performance has been tested in every possible way, not by professors of electricity and professors of spectrum analysis ; not by professors of psychology and professors of history ; not by men who have committed themselves beforehand to a belief in the supernatural character of the performance ; not by writers of popular fiction ; not even by amateurs who have had some experience of conjuring ; but by professional conjurers of the highest skill. It is sufficiently manifest that these are the only persons whose testimony as to the ' genuineness ' of the performances would be worth a rap ; and until their testimony is received, the true ' scientific ' attitude is that of incredulity. *Entia non sunt multiplicanda praeter necessitatem.* Supernatural agents are not to be postulated until natural agents have been found insufficient. Up to the present, natural agents have not been found insufficient. Up to the present no serious attempt has been made to search for natural agents for these performances. Up to the present the professors of electricity and spectrum analysis and psychology and history have shut their eyes and opened their mouths and swallowed any trash the mediums liked to present them with. Really, when we have read some of the experiences that these professors have gulped down with blind satisfaction, we wonder once more whether there are any bounds at all to human credulity, and whether professors, and especially professors of scientific subjects,

are not tenfold more credulous and more gullible than other men.

Whether this be so or not, it is clear that different people have very different standards of what may and ought to be believed. In these matters Sir Oliver Lodge and Sir Conan Doyle find it easy to believe, I think it may be said that they find it impossible not to believe, things that I and many other people cannot believe; and I have no doubt that I and those who think with me believe things that Sir Oliver Lodge and Sir Conan Doyle could not believe. That this is so shows that the two parties must have very different standards of credibility; and it is a mere useless beating of the air to discuss whether this or that is credible or ought to be accepted until we have some common standard by which credibility may be tested. I propose, therefore, in the next chapter, to examine the grounds of belief. Those who read for entertainment only, and do not care to get to the bottom of things, may skip the next chapter; but it is not a bad propædeutic for those who wish to cultivate a scientific habit of mind, a habit of mind which not all 'scientific' men possess; which many professors of scientific subjects do not possess.

CHAPTER II

THE GROUNDS OF BELIEF

THINGS exist or do not exist, happen or do not happen. The existence or happening of a thing is called a fact—a thing done. Our business, if we think about facts at all, is to bring our attitude of mind into conformity with fact, so that if a thing does exist or has existed, is happening or has happened, we should so believe ; and if it does not exist or has not existed, is not happening or has not happened, we should attune our minds accordingly, and disbelieve. Beyond this, we may carry our contemplation forward to the future, and believe that a certain thing will exist or will happen ; but in this case we must not speak of fact, for a fact is a thing done, and until the thing does exist or does happen we have no means of verifying the belief. Here I speak only of belief in facts.

It is a commonplace of philosophy that we have no experience of things themselves, but only of their appearance ; and with respect to things that we rightly believe, such as the existence of the German Emperor or of the happening of the battle of Tannenburg, we in this country have not even appearance to warrant our belief ; and with respect to yet other things, such as the existence of Julius Cæsar, and the happening of the great earthquake at Lisbon, no one now living has any appearance to go upon. Yet we believe them, and no one questions that the beliefs are justified, and that it would be unwarrantable incredulity to doubt them. How then are we to bring our beliefs into accord with fact, our disbeliefs into accordance with the absence of fact ?

In this way : between facts, or the existence or hap-

pening of things, and our minds, which should be moulded into conformity with the facts, but which can have no experience of facts, there is an intermediary, which we call evidence. The facts give rise to evidence, and it is the evidence and not the fact that impresses our minds. We can never have any immediate knowledge of things or facts external to our minds : all that we can ever know is the evidence for or against them, and it is notorious that evidence may mislead, and often does mislead. Still, though it may mislead, it is the only means we have of attaining a knowledge of fact, and therefore it is of the utmost importance that we should know what is evidence and what is not ; to what fact evidence points ; what evidence of fact is trustworthy and what is not ; how evidence is to be interpreted ; what kinds of evidence there are ; when evidence becomes proof ; and generally ascertain how to infer from evidence to fact, and how to bring our beliefs into accordance with the best evidence we can get.

For, as belief should rest upon evidence, so it should be in accordance with evidence. Of some things, such as the size and position of a possible crater on the other side of the moon, we have no evidence at all, and therefore ought to have no belief at all. We have no right to form an opinion, no justification for an opinion. Of many other things, such as the existence of enormous serpents in the depths of the sea, or the occurrence of seasonal vegetation in Mars, there is some evidence, but the evidence is inconclusive, and towards these facts the attitude of our minds should be one of doubt or scepticism. We may form a tentative opinion, but we have no right to hold a strong belief either one way or the other. Of yet other things, such as the existence of trees or the occurrence of rain, the evidence is conclusive and unassailable, and towards these our attitude of mind should be one of belief.

It is customary to speak of ' a knowledge of the facts,' as if such a knowledge were practicable, and indeed frequent. From what has been said it is evident that we

can have no first-hand knowledge of any fact. All that we can know is the evidence that seems to warrant a belief in the fact. No doubt when the evidence is quite conclusive, as when we go out and are wetted by the rain, it would be pedantic and ridiculous to object to the expression that we know the fact that it is raining. In such cases we leap over the evidence, and conclude that knowledge and belief conform with the fact ; but the habit of leaping over the evidence has its dangers. It very often leads to the acceptance of the knowledge of evidence as if it were knowledge of fact : it very often leads to a disregard of flaws in the evidence that should make us hesitate. The attitude of hesitation, of suspension of judgment, is, however, to most people irksome, repellent, and even painful. To many it is impossible, and few will submit to endure it until they have trained their minds to it. Most people, as to most things, must either believe or disbelieve, and no middle course is possible for them. There are, however, so many cases in which suspension of judgment is the right attitude to adopt, that it is the plain duty of everyone to cultivate this attitude, and not to allow himself to be enticed out of it by anything but evidence.

Evidence is of three kinds, derived from three different sources : evidence of sense, evidence of reason, and evidence of hearsay. Evidence of either kind may be conclusive or inconclusive, convincing or worthless.

EVIDENCE OF SENSE

The evidence that the facts themselves afford directly by acting on the senses of hearing, sight, touch, resistance, and so forth, is commonly regarded as conclusive and unimpugnable. ' Seeing is believing ' is an aphorism that everyone accepts. That which is palpable cannot be gain-said. These assertions are in one sense the truest of truths and the tritest of truisms ; but in another sense they may be very misleading. When we have an impression on a sense, when we see a light, hear a sound, or feel a touch,

these are facts of ultimate certainty. These are occurrences in our own minds, and are in themselves facts, the only kind of facts of which we have direct knowledge, and these we cannot doubt. We cannot doubt, we must believe, that we do experience the sensation, that we do see the light, hear the sound, or feel the touch, as the case may be ; but a sensation no more remains a bare sensation when it is received by the mind than a fly remains a bare fly when it is received into a spider's web. In each case the intruder is instantly enveloped in a web of material furnished by the owner of its new surroundings, a web which distorts and transforms it, and makes of it a very different thing. The mind is rarely content to receive a sensation and let it remain a bare sensation. It instantly begins to work upon the sensation, to interpret it, and to infer from it to some external fact that corresponds with it and gives rise to it. This is shown by the character of the response that is instantly made by the mind to any sudden and unexpected vivid sensation. When we receive a sudden flash of vivid light, or a sudden loud unexpected sound, or a sudden unexpected touch, of which the source is not immediately apparent, the instant and unfailing response is 'What's that?' The question does not refer to the sensation. We know perfectly well what the sensation is. It is a flash of light, a loud crack or boom, a touch, light or heavy ; and no investigation is needed to give us any further knowledge of the sensation itself. What the question refers to is not the sensation itself, but the source or origin of the sensation. The question refers, not to the feeling in our mind, but to the external fact that gives rise to the feeling. We say or think 'What's that?' but if we were to express our meaning with pedantic accuracy, we should say, 'What has happened?' 'What fact has occurred to give rise to this sensation?' The sensation is evidence. The knowledge or belief of what has occurred to give rise to the sensation is arrived at by interpreting the evidence ; and the knowledge or belief will be true or false according as

the interpretation is correct or incorrect. For this is the important matter that should never be forgotten: the moment interpretation enters upon the scene, at that moment enters the possibility of error. We cannot make a mistake about the nature of the sensation we experience. We cannot mistake a light for a sound, or a sound for a touch; neither can we mistake (unless we are colour blind) red for blue, or a crack for a musical note, or a smooth gentle touch for a painful knock; but we very well can and often do misinterpret the sensation we receive, and attribute it erroneously to some one fact or class of facts, when in truth it is due to another. To this source of error we shall return in a moment, but first it is necessary to point out that though we cannot mistake the nature of a sensation as and when we are actually receiving it, yet errors may be made both in the reception and in the remembrance of sensations. The following errors are not only possible but frequent:

1. *We see what we look for. We overlook what we are not looking for.*

A seafaring man on board a ship at sea sights land in the far distance, and calls the attention of a landsman to it, pointing out the direction in which it lies. The landsman looks in that direction, but he cannot see the land, which is plain enough to the seafaring man. This is a common experience, and it is usually explained by supposing that the sailorman has the better sight, that his vision is more acute. This need not be so, and in many cases is certainly not so. The landsman may have vision as good or even better than that of the seafaring man, but yet he cannot see what the seafaring man sees plain enough. The reason is that the landsman does not know what to look for, and is looking for the wrong thing. The last land he saw appeared to be rising out of the water; its outline was conterminous below with that of the water; he saw the green fields, the little dots that he knew were houses, the

church spires, the confused patch of colour representing the seaport town ; and this or something like it is what he expects to see again. This is what he looks for, and as he does not see it, he thinks he sees nothing. But as soon as the sailorman explains to him that the faint cloud above the horizon, disconnected from the horizon line and apparently floating in the air, is land, then the landsman can see it. No doubt the cloud-like appearance had already produced a sensation in his mind, but he overlooked it because he did not attend to it. He was looking for a very different appearance, and he passed over what was there in searching for what was not there. When once it is pointed out to him, he sees it, and he thinks he now sees it for the first time. In fact, he saw it all along, but he now attends to it for the first time ; and in future he will see it more easily, for in future he will know what to look for.

As soon as a patient's skin is uncovered, the physician sees that it has typhoid spots upon it, and tells his student so. The student looks at the skin, but he can see no spots. He thinks the physician is either joking or is imagining the spots. But when the spots are pointed out to the student with the point of a pencil, and a line is drawn round them, he sees them plain enough ; and he sees that they are not the kind of spots that he was expecting. He expected a definite, strongly marked, plainly pronounced difference between the spot and the rest of the skin, a thing that could no more be overlooked than a pimple on the face, or a blot of ink on a page ; and as that was what he looked for and that was not there, he saw nothing there. These tiny, faint, rose-coloured spots are so little different from the surrounding skin, so inconspicuous, so unlike what he expected to see, that he overlooks them altogether, and says he does not see them. He does see them, but he does not attend to them. He does not pick them out. He does not notice them.

The same thing happens with other senses. I am engaged in an interesting argument with my guest when my servant

comes in with the tea-tray, and as she lays it down she makes some remark which is plainly audible, but which I do not 'hear' because I do not attend to it. My attention is fully engaged elsewhere, and although the sound strikes upon my ear, and although the sensation of sound is produced in my mind, it is to me as if it were not, because I am not expecting it, and I am expecting something else, viz., my guest's answer to the poser I have just put to him.

We see what we look for: and if we strongly expect it, we see it even if it is not there; in other words, we imagine we see what in fact we do not see. We see the trickster drop the sovereign into the purse which he immediately offers to us for a shilling. If we are credulous enough to purchase the article, we find that it contains not a sovereign but a halfpenny. The trickster had drawn our attention to the sovereign; he had announced his intention of dropping it into the purse; he had repeatedly dropped it into the purse in a certain way, with a certain gesture, holding them both in a certain manner, and thus had aroused a strong expectation that he was about to drop the sovereign into the purse again; and when we see him, holding the purse and the sovereign in the same way, make the same gesture, and drop something into the purse in the same manner, we declare that we see him drop the sovereign into the purse. We see what we expect to see.

Across the space now occupied by the opening of Northumberland Avenue into Trafalgar Square used to stand Northumberland House, a large white house of many windows, on the top of which stood the model of a lion, painted red, and with his tail stretched out nearly horizontally. Theodore Hook, the practical joker, once gathered a large crowd in Trafalgar Square, and persuaded many of them that the lion wagged his tail; and he persuaded them by suddenly stopping and gazing at the lion with intentness, exclaiming from time to time 'There! There again! He did wag it. The tail moves! Positively it moves! The lion is wagging his tail!' In this way he raised among the crowd such a confident

expectation that the lion would wag his tail that they thought they saw the tail move. They saw what they confidently expected to see.

Sick people who are confidently assured that a certain mode of treatment will cure them or will do them a great deal of good, undertake the treatment, if they are of a sanguine disposition, and especially if they have great confidence in the assurance given to them, with the confident expectation that they will be cured, or at least greatly benefited; and so confident is this assurance that even when their malady is gravely and permanently incapacitating, they disregard their own sensations, and confidently believe that they are cured, or at least that they are much improved and in sight of a speedy cure. Instances are too numerous to need the citing of particular examples.

When we are confidently expecting a visitor, and the time is arrived at which his visit is due, we interpret every sound as a footstep, or as the grinding of wheels on the gravel. If we are watching for him, every figure that appears in the distance seems to resemble him, to walk with his step, to have his air. To those who have lived all their lives among the mad, mad people look much as other people, but the stranger, the visitor, always finds a mad glare in the eyes of the insane, or a look of cunning, or of ferocity, as the case may be. He has been told it is there, and he expects to find it, and consequently he does find it, though it is not there and never was there.

2. *Though impressions on the senses are faithfully received, yet they may be wrongly remembered, even after a very short interval.*

We may so far forget that we have seen, heard, or done a thing that, even a short time afterwards, all recollection of it appears to be obliterated from the memory, and we may deny in perfect good faith that we have had any such experience. In this also, instances are too numerous and too frequent to require illustration. How often have we not all of us had to look again at the clock to see the time,

which we read a few moments ago ; to go back and make sure that we have locked that desk or that drawer, which we find duly locked and the key of it in our pocket?

Obversely, we are most of us apt to remember, as if they had occurred, things that in fact have not occurred, or have not occurred in the way we remember. How often have we not occasion to say 'I thought I left my keys on this table' when they are in our pocket ; or in the drawer upstairs ; or 'I think I remember seeing you at the meeting of the Society at Bristol' when our interlocutor has never in his life been to Bristol or attended a meeting of the Society. That memory is apt to be faulty needs no insistence, but that it may be faulty with respect to things that have just happened does need to be insisted upon. When the trick is performed and the result attained, we may find it impossible to remember the exact order in which the conjurer conducted his proceedings, and yet upon this order the whole explanation of his result may depend.

These errors occur in the actual reception of sensations, or if not in their mere reception, yet in their deliberately conscious reception by the attentively receiving mind ; but these errors, grave as they may sometimes be, and gravely as they may affect our conclusions as to what actually exists or has happened, are trifling compared with the errors that may arise from the misinterpretation of sensations. As has already been said, the sensation is evidence ; the knowledge of the external fact that gives rise to the sensation is arrived at by interpreting the evidence, and the interpretation is very apt indeed to be erroneous ; and as the interpretation, so the belief that is founded on it.

I hear a booming rumbling noise, and this sensation is evidence to me that some fact has happened in the world outside of me ; but what it is that has happened the noise does not tell me. To discover the source or cause or origin of the noise I must interpret it by the activity of my own mind working upon the sensation it has received. I inter-

pret the sound as thunder. I may be right : I may be wrong. It may be thunder : it may be heavy guns. The sensation itself does not tell me which it is. My belief that it is thunder is derived from my interpretation of the sensation, and this interpretation may be right or wrong. Interpretation is effected by likening the sensation to some sensation we have experienced before, and the source of which we have ascertained. The more closely alike the new sensation is to the old, the greater is our confidence that the source of the new sensation was like the source of the old. When I hear that deep booming sound, I mark its resemblance to such sounds that I have heard in the past, and I say ' That must be thunder,' or ' That must be heavy guns.' Which source I choose must depend on my recollection of the sounds of thunder and of guns, and upon which of these the sound that I now hear most resembles. If it is a single boom and then ceases, it is more like the discharge of a heavy gun, and therefore more likely to be due to the discharge of a heavy gun. If it rises in rapid crescendo to great intensity and then dies away in a long diminuendo of varying intensity, it is more like thunder, and more likely to be due to an electric storm, and so I interpret it. If it is as like previous experiences of the one as it is to previous experiences of the other, I ought to suspend my judgment, unless I can call in aid some evidence that corroborates the one explanation rather than the other. If the sound is preceded by a vivid flash of light, I am greatly assisted in my interpretation ; for in this it resembles thunder and differs completely from the sound of distant guns. In this case, we call in aid the evidence of one sense to corroborate or correct the evidence of another ; and this corroboration or correction, if it can be obtained, usually enables us to remove any doubt we may experience. If we see in a dark corner what looks like the outline of a solid object, but are in doubt whether the seeming variation in the light is due to this cause or to some other, we can resolve our doubt by calling in aid the sense of touch. If we grope in the corner, we do or do

not experience a sense of touch, and in either case our doubt is resolved.

From the foregoing discussion we must conclude that though the evidence of our senses is the most trustworthy evidence we have of what exists or happens in the world outside of us, yet it is far from being completely trustworthy, and needs to be scrutinized with care. Seeing is not always believing, and even that which is palpable may be misinterpreted. If we cross the second finger over the first and touch with the tips of both simultaneously a marble or a penholder, we shall feel not one object, but two. If we get up in the night in a strange room, and traverse with our fingers the things, to which we have paid no special attention in daylight, that are on the table, we shall gain very erroneous notions of their respective sizes and positions, and may even be unable to tell what some of them are. In the dark, touch is a misleading sense ; and our interpretation of things we touch in the dark is often widely astray ; still more astray are our interpretations of things that in the dark touch us.

How very faulty may be the evidence of sense, and how widely our interpretation of this evidence may depart from the truth is shown with exaggerated clearness by the performances of conjurers. A most important part of the art of the conjurer, and one in which some conjurers attain extraordinary efficiency, is to captivate and direct the attention of the observer. It is the conjurer's business to lead the attention of the observer away from that aspect of the matter that might lead to the discovery of the trick, and to concentrate it upon occurrences that cannot lead to discovery. It is his business to create a confident expectation of what is going to happen, or of what is about to be seen, so that what actually does happen or what is actually there to be seen may be overlooked. That this may happen, and very often does happen, in ordinary life, when no effort is made to divert the attention or to arouse a confident expectation, has already been shown ; and the demonstration could be reinforced if it were necessary by

many more examples. How much more may this not happen when the conjurer deliberately lays plans for the purpose, and devotes to it the skill resulting from natural aptitude developed to the highest point by years of constant training ! The result is seen in the marvels performed by such conjurers as Mr. Devant, marvels that do indeed seem altogether superhuman until their mechanism is explained, marvels to which the performances of the spiritualistic mediums are the performances of clumsy and untrained amateurs ; and yet marvels that cease to be marvels the moment we are instructed in the very simple means by which they are brought about. When, therefore, we are met by the exclamation ' Surely I may trust the evidence of my senses ! ' the answer is that that depends ; and that if you do trust the evidence of your senses without taking adequate precautions to test the trustworthiness of the evidence, you may easily fall into a booby trap so mortifying to your vanity that you will be strongly tempted to deny that you have been deceived, and to bring forward a second deception to corroborate the first, and so on in endless series. Once a man's vanity, or to put it more gently, his self-respect, is engaged in the maintenance of an opinion, we shall seek in vain to shake it ; for very few men have the candour or the courage to admit that they had no business to trust the evidence of their senses, or that they have been deceived by a simple artifice. It is a humiliation that needs much courage to face.

The consequence of continually professing a belief without seriously examining ourselves to see whether we really believe it or not, is that at length we come to believe it ; or at any rate our self-respect is so bound up with its maintenance that we act as if we believed it. It is much the same with the profession of a belief that we have examined, and have not been convinced of. If we continue nevertheless to assert our belief in it, we come at length, if not actually to believe it, at any rate to act as if we did. We have not the courage to admit that we have

been mistaken, and therefore we continue to profess the belief until the profession becomes a part of our mental equipment, and we cannot afford to lose it. At length, if we do not actually believe it, we believe we believe it.

EVIDENCE OF REASON

As we have just seen, the whole cogency of the evidence of the senses lies in the way we interpret it ; and we interpret it by the activity of the mind working on the material with which the senses furnish it. Interpretations of sensations, or perception, is, in short, an example and a method of reasoning ; very elementary reasoning it is true, but still reasoning of a kind, and of a kind that is the model of a very large part of our reasoning. The only difference is that in the rest of this kind of reasoning the material is not the direct evidence of the senses, but other evidence—evidence that has been gradually accumulated in our minds by experience and hearsay, and which the mind can work upon and interpret in the same way as it works upon and interprets the evidence of sense ; that is to say, by remembering, and by tracing likeness and difference between the things remembered. The general rule is that the more completely the evidence harmonizes and accords with what we know to be true, the more readily we may accept it as evidence of truth ; and *vice versâ*, the more incongruous and discrepant the evidence with what we know to be true, the more cautious we should be in admitting it.

This raises the crucial question, What do we know to be true? and this question has, curiously enough, two answers, one derived from reason and one from experience.

A statement is not bound to conform to truth. We can form the statements ' Paris is in London,' ' The Thames is run dry ' ; but we cannot assert either of these statements, for assertion means that we intend what is asserted to be received as true. Now there are certain statements that are not merely false, like the instances just given, but that the mind refuses to entertain. A statement consists of two terms predicated to hold towards each other a

certain relation. It is possible to take any two terms we please, and to couple them in a statement by any verbs we please, and the resulting statement then comes before the mind for acceptance, or rejection, or any other operation the mind can perform upon it. With this wide liberty of concocting statements it is evident that we can, if we please, form some that are nonsensical, and that convey no idea to the mind, as for instance 'Two o'clock is solid,' 'Limestone reasons downward,' 'Hens shine pocket-books.' Such statements the mind has nothing to do with. It neither accepts nor rejects, but disregards them. It is impossible even to consider whether they are true or not. There is a second kind of statement which is not nonsensical, which can be entertained by the mind, but which the mind instantly rejects, because it cannot conceive the terms to stand in the relation which the statement purports to assert. Such are the statements 'The hen laid an egg larger than itself,' 'The space was enclosed by two straight lines,' 'The solid body is liquid,' 'The pain was unconsciously felt.' In these cases the relation expressed in the proposition is inconceivable. The mind cannot put the terms together in the relation that is predicated. It is intuitively perceived that the statement is false, and that its contradictory is true. Thus, by the light of reason alone, by the very nature of the terms, it is seen that they cannot exist in the relation predicated, and that the contradictory of that relation must be true. The realization of this truth does not rest upon experience. It is independent of experience, and apart from it; and it is the highest and most assuredly certain truth that the mind can entertain. We need no experience to assure us that the hen did not lay an egg larger than itself, that the space was not enclosed by two straight lines, that the solid body is not liquid, or that the pain was consciously felt. When I say we need no experience, I must be understood to mean no experience beyond what is necessary to understand the statement. Of course we must have had sufficient experience of hens,

and of eggs, and of what is meant by hens laying eggs, to understand what the statement means. We must have had experience of lines that are approximately straight and of spaces bounded by lines ; of solids and of liquids ; of pain and of other feelings ; but we need not put these statements to the test of experience. We see at once, intuitively, and without any empirical test, that they cannot be true, and that their contradictories must be true. Such truths, which are the contradictory of what is inconceivable, are called Axioms ; and as already said, axiomatic truth, or axiomatic certainty, is the uttermost certainty of belief that the human mind can entertain. The terms are bound up indissolubly in the relation, and no effort of mind can tear them asunder.

Axiomatic truth is the contradictory of what is inconceivable. Herbert Spencer arrived at the conclusion that the test of truth is the inconceivability of the opposite, and this doctrine was strenuously opposed by Mill ; who declared that it is no test, since many things, such as the antipodes, the rotation of the earth, and gravitation, were inconceivable to our forefathers, but are become common-places to us. The contradictory of these beliefs was accepted by our forefathers as true, and is known by us to be false. The contradictory of what is inconceivable is therefore, in Mill's opinion, not necessarily true. It may be as mistaken and false as any other belief. Spencer felt that he was right, and he was right ; but he had great difficulty in meeting Mill's objection, and never met it satisfactorily. He maintained that in the cases adduced by Mill, the relations that had been thought to be inconceivable were not really inconceivable, but had been thought to be so because they were not clearly represented or pictured in the mind. When, however, we do clearly represent a relation in the mind and find it indissoluble, it must, so Spencer said, be true, and we cannot help admitting that it is true. Spencer rested his defence upon a wrong ground, and it is easy to demolish. There is no difficulty in clearly representing or picturing in the mind

the antipodes and the rotation of the earth ; and both their existence and its contradictory are easily conceivable, and have in fact been conceived. The true defence is that Spencer, when he said that the contradictory of the inconceivable must be true, was referring to axiomatic truth ; Mill, when he denied it, was referring to empirical truth ; and thus both were right and both were wrong. That the earth rotates, or does not rotate, is a relation whose terms do not refuse to exist in either relation. The mind can put them together in either relation, and does not intuitively perceive that either is true or false. Which is true and which is false is for evidence drawn from experience to decide. But to perceive the truth of an axiom we need no evidence. We need no evidence to enable us to decide whether a hen can lay an egg larger than itself, or whether two straight lines can enclose a space, or whether a pain can exist without being felt, or whether a solid thing is liquid. As soon as we have experience enough to comprehend the relation that is asserted, we see that it must be false. The mind refuses to entertain it, and asserts at once that the contradictory must be true. Mill's instances are not of this nature. Whether they are true or false is matter for discussion : it is for experience to decide : their truth or falsity is not intuitively perceived the moment they are stated and the mind grasps their meaning. In short, they are not axiomatic truths or certainties, they are empirical beliefs. They rest upon experience.

Rightly apprehended, an axiomatic truth cannot be doubted. Of course we may frame a statement which purports to deny an axiom, but it is beyond human capacity to doubt an axiom, and anyone who pretends to do so is either deliberately lying, or is so muddle-headed as not to know the meaning of what he says.

Empirical certainty is a degree less assured than axiomatic certainty. Empirical truth, once established, must be believed ; but it is always open to us to conceive the contradictory, though we may not be able to believe it. Empirical truth is, as its name implies, founded upon

experience, and our warrant for it is experience alone. Conceivably the fact might be otherwise. In experience it never is and never has been otherwise. Consequently, as long and as far as our knowledge that it never has been otherwise extends, we are precluded from believing that it ever will be otherwise. It is to us an empirical certainty. The basis of empirical certainty is constancy in experience, by which is meant in the first place, the accumulation of instances without exception. The greater the number of experiences of a given fact that we can accumulate without finding any exception, the firmer becomes our belief that the fact is universally true, and that no exception will be experienced ; until at last conviction becomes unshakably assured.

No one nowadays doubts that mankind are necessarily mortal—that every man, woman, and child that now lives will die, and that there is no one now living who was alive two centuries ago. This is not an axiomatic truth. The contradictory of it is not only conceivable, but has by many people been conceived, and even believed. There have been few primitive peoples who have not believed in the immortality of some chief or prominent character who impressed himself powerfully on their minds during his lifetime, and became the centre of legend after his death. We have our King Arthur, our Merlin, our Thomas of Ercildoune, the Germans their Frederick Barbarossa, the Danes their Holger Danske, and other nations their analogous characters ; but such beliefs have prevailed only among primitive people, belonging to small communities without authentic memorials of past times, and without any critical faculty of interpreting evidence or of determining the grounds of belief. As far as we know, there has never been an instance, there is no evidence worth the name, that of all the millions of millions of mankind who have lived in past ages anyone has escaped the fate of dying.

This complete constancy in experience of the sequence of death upon life in men is of itself sufficient to produce in us

an empirical certainty that the sequence never will be broken, and that all children who are born into the world will die sooner or later ; but this constancy in experience is reinforced and corroborated by a constancy of far greater extent. Men are living beings, and with respect to what they have in common with other living beings we can argue from other living beings to men ; and our constant experience of all living beings, animal and vegetable alike, is that after a period of life they die. More even than this, the slowly accumulating experience of mankind through the centuries, and the insight that we have gained in the last few generations into the processes of nature all go to show that destruction, dissolution, decay, or at least change, is the universal law of all material things ; and man's body is a material thing. This vast concourse of experiences, to none of which can any permanent exception be shown, breeds in us a corresponding fixity of belief in the inherent mortality of man, a belief that is not axiomatically certain, for it is not difficult to conceive that a man should go on living for an indefinite time, and indeed many have conceived, and even in a sense believed it ; but the belief is empirically certain, for, with the evidence now at our command, it is impossible to admit that any man has lived much beyond a century, and this complete constancy in our experience of an indefinitely great multitude of cases of men and other living things, justifies and compels an empirical certainty of belief.

A very similar empirical certainty is that heavy bodies, if unsupported, fall to the ground. This, again, is not an axiomatic certainty. It is easy to imagine heavy bodies without support remaining suspended above the ground ; and the case of Laputa shows how easily it can be imagined, while the case of Mahomet's coffin shows that it can be not only imagined but believed. We have, in fact, many experiences of heavy bodies without visible support which yet do not fall to the ground. Every flying bird is such an instance, and we frequently see leaves, straws, and other things tossed about by the wind without falling. In

such cases we soon learn that the air, though invisible, is a support, and that the rule is not really broken ; and so at length, by the accumulation of innumerable experiences without any real exception, experiences constantly recurring throughout every moment of our lives, we are driven and compelled to adopt as quite certain the belief that heavy terrestrial bodies, if unsupported, will inevitably fall to the ground ; and although we can imagine exceptions, we cannot believe that there ever has been or ever will be a real exception, and the belief is inescapable. It is an empirical certainty.

These, it will be seen, are cases of that *enumeratio simplex, ubi non reperitur instantia contradictoria* which Bacon and subsequent logicians have scouted as utterly untrustworthy as a ground of belief. It is unquestionable that it is, on the contrary, the ground of the most certain and inescapable of all our empirical beliefs.

It is true that it is not always a satisfactory ground of belief, or at least that the evidence may be so interpreted as to give rise to beliefs that are unwarranted. The ancients believed, on somewhat similar grounds, that every swan is and will be white, and that no such thing as a black swan is credible. Since their day, black swans have been discovered, and they have been shown to have been in a sense wrong ; but they were not wholly wrong. Let us see what were the grounds of their belief. They had had many experiences of swans, and in every case without any exception the swans had been white. According to rule, therefore, it seems that they were justified in entertaining the certain conviction that all swans thereafter discovered would be white, and no swan of any other colour would ever be found. It will be seen at once, however, that the number of cases, in which swans had been seen and found without exception to be white, were as nothing in comparison with the number of cases in which unsupported things had fallen to the ground, or with the number of cases in which men and other living beings had proved their mortality by dying. A very important element in

confirming the certainty of an empirical belief is the number of cases in which the conjunction or relation has been witnessed and found to be constant. Constancy, however complete, experience, however uniform, that extends over but few cases ought never to be accepted as ground for a certain belief ; and the acceptance of a few cases as proof of a general law is one of the most fertile sources of erroneous belief. If, upon visiting a new country, the first man we met was six feet four, or even the first two or three men we met were more than six feet high, it would be manifestly very unsafe to form the belief that all the inhabitants of that country were exceptionally tall. Although the relation would be constant in experience as far as experience went, the experience would be far too limited to justify a belief in the general prevalence of the relation. A similar error, not so gross, but similar in kind, though less in degree, vitiated the belief of the ancients in the universal whiteness of swans. The instances were too few.

But there was another and more serious error. We have seen how enormous a corroboration and justification for the belief in the mortality of men is afforded by the constancy in experience of the mortality of other living things, that is to say, of things that, for the purpose of the argument, are like men. It is manifest that if all birds, and still more if all animals also, had been white, and no instance of a bird or an animal of any other colour had ever been known, the certainty of the belief that all swans are and will be white would have received a tremendous corroboration. But this is not so. Not only animals, but birds also, exhibit a great diversity of colour, and even some birds that are, for the purpose of the argument, not unlike swans, such as geese, exhibit some diversity of colour. Therefore, the belief that all swans are and will be white was risky, and should have been held lightly, and subject to further experience.

Nevertheless, as far as it went, and as they understood it, the belief of the ancients that all swans are white was

justified, and was true. By 'swans' they meant the species and breed of swans that they knew, and with respect to these 'swans' they were right ; for no swan of that species has ever yet been of any other colour, as far as we know, in the two thousand years that have elapsed since their day : and with every generation of these swans the appearance of an individual of any other colour becomes less likely. The black breed of birds resembling swans, which has since been discovered, we call by the name of swans, but they are not the same kind of swans as were known to the ancients, and might very well have been called by some other name. They may be swans, but they are swans with a difference ; and as far as the swans which the ancients believed to be always white are concerned, their assertion was true.

It is clear, I think, that empirical beliefs in the general truth of relations always depend upon the constancy in experience of those relations, and are the more justifiable, the more confirmed, and the more inescapable, the greater the number of instances in which the experience has been constant.

Supposing, however, that the relation is not constant in experience, but is liable to exceptions, in which its terms are experienced dissevered from one another, what effect will this inconstancy in experience have upon the attitude of mind ? For instance, cancer is generally a fatal disease, but every now and then there occurs a case in which a cancer, after having advanced to a certain stage, shrinks up, dwindles away, and disappears, or leaves a mere remnant, and the patient recovers his former health. If we have had, directly or indirectly, that is to say by ourselves or by others, experience of a very large number of cases of cancer, every one of which has been fatal, our belief in the fatality of cancer will be strong in proportion to the number of cases in which a fatal issue has without exception occurred. Now if a case occurs in our experience in which recovery ensues, we have two alternatives of interpretation. We may believe that we have been

mistaken in supposing that the disease is cancer, and may adhere to our original belief that cancer is always fatal ; or we may modify our belief about the fatality of cancer, and admit that though it is very generally fatal, yet it is not always so. There is no doubt that in every case in which the experiences of constancy have been very numerous, the safest course is the first. We should assume that we have been mistaken in supposing that the constancy has been broken, and should require the most stringent and unimpugnable evidence, first that the tumour really was cancer, and second that it really did shrink up, dwindle away, and allow the patient to recover. Unless and until evidence on both these points is established beyond reasonable doubt, we ought not to admit that cancer can ever recover. But if these two matters are satisfactorily established, then we can no longer doubt, but must modify our original belief, and admit that, although cancer is generally fatal, yet it is not universally or necessarily so. This modification of our belief is the more permissible since we cannot bring the case of cancer, as we can bring the case of mortality, under a wider and more general law which also is completely constant in experience. There is, it is true, a group of diseases to which cancer belongs. It is a kind of tumour, and there are many other kinds of tumour. If every one of these kinds were uniformly in experience fatal, the case for the constantly fatal termination of cancer would be immensely strengthened ; but this is not so. Many tumours are 'benign' and do not appreciably hasten the advent of death.

The number of cases in which cancer has been watched and has been found to be fatal is many thousands, many tens of thousands, perhaps many hundreds of thousands ; and the number in which the result has not been fatal has been few, perhaps a few dozen, perhaps a few score ; but in any case, constancy in experience, even if complete, and even in hundreds of thousands of instances, does not warrant the assured certainty that is derived from the

constancy in experience of the fall of unsupported bodies. Of this we have experiences by myriads, experiences daily and hourly all our lives long, experiences that are common to ourselves, our companions, our predecessors, and as far as we know to the whole human race. Besides this, the fall of heavy terrestrial bodies, unlike the mortality of cancer, can be brought under a wider law, whose incidence is completely constant in experience. It is an instance of the law of gravitation, that is constant, not only for terrestrial bodies, but for the earth itself; for the moon, for all the bodies in the solar system, and certainly for many bodies outside that system; and if it is not positively known to be constant for all bodies outside the solar system, at any rate no positive exception is known, and no reason to suppose an exception has ever presented itself. To such constancy in experience no exception ought to be admitted on any ordinary evidence. Any apparent instance to the contrary should be *primâ facie* disbelieved, and no approach to belief should be admitted until the instance has been examined, and tested, and re-examined, and retested, in every possible aspect and by every possible means. Mere eye-witness of such an instance is worthless, and should not be admitted for an instant. If a person thinks he sees a heavy object, such as a table or a man, rise from the ground and remain suspended in the air without visible means of support, he should assume as a matter of course that there are means of support invisible to him; and in the improbable event of his investigating the matter closely and still discovering no means of support, his proper attitude of mind is to assume that the means of support are so cleverly hidden that he is not able to discover them. In face of the universal experience of the human race that the relation is constant in experience, he would be guilty of unjustifiable credulity if he believed, on the uncorroborated evidence of his senses, that an exception could occur.*

* This passage was written years before I thought of writing this book, and before I had given any attention to spiritualism.

In many things experience exhibits little or no constancy. In this country there is very little constancy in the sequences of the weather. A fine day may be followed by a fine day, or it may be followed by a wet day ; and as there is no constancy in experience, so there can be no assured belief, and in any individual case no assured expectation. We may, indeed, be able on other grounds to forecast with some success what the weather will be to-morrow, but we cannot do so on any constancy in experience of the succession of a wet day on a fine one, or *vice versâ* ; but though we cannot rightly form any belief of the kind of weather that will occur on the day following a wet day or a fine day, we are not altogether debarred from belief. On the contrary, our experience has been in some respects constant, and consequently in some respects we have very definite and positive beliefs about the weather generally. As far back as our records go, and as far as the memory of the oldest inhabitant serves, the weather in these islands has been generally inconstant, with occasional spells of uninterrupted rain, and occasional spells of uninterrupted fine weather. We are therefore justified in believing, and indeed compelled to believe, that in future the weather here will continue to exhibit these characters, and that we shall go on indefinitely having spells of fine weather, spells of wet weather, and spells of changeable weather. In short, in whatever respect experience has been constant, even in inconstancy, in that respect we are justified in believing, and compelled to believe, that it will continue to be constant.

Empirical belief rests, therefore, upon two elements in experience : first on the absolute number of the experiences of the particular relation. If these experiences are sufficiently numerous, and are all one way, we must believe that the experience is necessary and will continue. The smaller the number of experiences, even if they are all one way, the less are we justified in arguing to other similar cases, and the more cautious should we be to keep an open mind. When experiences are not constant, but are some-

times one way and sometimes another, we are not warranted in believing that any new experience of the kind will be either way ; but when experiences of one way preponderate numerically over experiences of the other way, and the total of experiences of both kinds is very large, we are justified in believing, and compelled to believe, that a similar proportion will hold of such experiences in the future, and that the chances of a new experience being one way rather than the other will be in the proportion that the ways have borne to one another in the past.

CHAPTER III

EVIDENCE OF HEARSAY

NOTHING is more important to remember, and nothing is more often forgotten or ignored than this: *Whoso makes an assertion, upon him lies the burden of proof.* The time, labour, paper, ink, and temper that are wasted every year by neglect of this maxim are altogether incalculable; and the waste is not less, indeed I think it is more, in matters that are called scientific, and by men that are called scientific, than in any other field of human endeavour. When we are confronted with an assertion that appears to be false, or pernicious, or extravagant, or baseless, our first and natural impulse is to deny and controvert it; and hence arise most of the endless controversies of 'scientific men' on scientific subjects. The impulse is a natural one, but it is injudicious, and the course adopted is injudicious and unnecessary. When such an assertion is made, the proper course is not to deny it, nor to attempt to controvert it, but to call upon the asserter for proof. If, as sometimes happens, he can bring forward no evidence in support of his assertion, *cadit quæstio.* Except for fanatics and other irrational persons, the matter is at an end. If he responds to the invitation, and brings forward evidence, or what he thinks is evidence, of his assertion, then our duty is to examine that evidence, and ascertain whether it does in fact bear out the assertion or not. In many cases it will be found that what is adduced as evidence has no bearing at all on the assertion; and when it has, it will usually be found that what is merely evidence is put forward as proof.

For there is a vast difference between evidence and

proof, a difference that is not often recognized. I have found the assertion of this difference has aroused astonishment and incredulity when I have made the assertion even to very intelligent and highly educated men, accustomed to form independent opinions. The difference is this :

Anything germane to the issue and consistent with the assertion is Evidence of the assertion.

Proof is evidence that is inconsistent with any alternative assertion.

Thus, to take an illustration of Lord Bowen's, if a man is seen coming out of a public house and wiping his mouth, that is evidence that he has been having a drink. It is germane to the issue, and is consistent with the assertion. But it is not proof that he has had a drink. It is consistent with several alternatives. For instance, he may have gone into the public house to fetch a friend out, and that friend may have hit him in the mouth for his pains. But if he has been seen to raise a full pint pot to his mouth, and if when he lowered it the pot was found empty, that is proof that he has had a drink, for it is evidence that is inconsistent with any alternative.

The difference between evidence and proof appears to be quite unknown to Sir Oliver Lodge and his supporters. The ' observations ' and ' experiments ' that they record are evidence in favour of the hypothesis of telepathy ; but they are not proof of this hypothesis until it has been shown that they are inconsistent with any and every other hypothesis ; and this has not been shown. It has been assumed, but it has not been proved. In his observations of the feats of Miss E. and Miss R., presently to be described, Sir Oliver Lodge shows that the results achieved were inconsistent with the supposition that they were achieved by aid of the sense of sight ; but he does not prove, he offers no evidence, he does not take into consideration, that they may have been achieved by the aid of some other sense. Such evidence is wholly inconclusive. It is evidence, but it is not proof.

The evidence in favour of witchcraft was copious to

overflowing abundance. Much of it was of a very cogent character. It was far more abundant and far more cogent than the evidence in favour of telepathy. It was not restricted to the performance of a few special mediums on a few special occasions, but was frequent in the experience of the whole populace. Mediums profess mediumship in most cases for direct pecuniary profit ; in many cases for indirect advantage, for the honour and glory, for the interest that centres in them, for the mystery that envelops them, for the power that is attributed to them ; but the witch who confessed to the practice of witchcraft did so well knowing that she would bring upon herself a cruel and agonizing death. Yet she confessed. And as to a great part of her confessions there is no doubt they were true. She did make use of charms. She did cast spells. She did invoke the Powers of Darkness. She did abjure the Scriptures and devote herself to the service of the Devil. She did make magic circles, and say the Lord's Prayer backwards, and practise the other arts of the witch. More than this, there is no doubt that the effects for which she practised these arts did sometimes follow the practice. Her neighbours' children did sometimes fall ill ; their cows slipped their calves ; their milk turned sour ; their boats foundered ; their crops failed ; and they themselves suffered from stomach-aches and other ills. The evidence was abundant, and it was cogent ; but it was not proof. It is not now generally accepted as proof, but it was so for ages, and the wonder is that the belief ever died out, for the evidence was much more abundant and much more cogent than the evidence for many beliefs that are now accepted, especially for the belief in telepathy.

In this case also much of the evidence is true, or may be true. The medium, like the witch, may believe thoroughly in her own powers. The medium, like the witch, does execute the practices of her art. The consequences that the medium wishes to follow her practices do sometimes follow them, just as the consequences that the witch desired did sometimes follow her practices. But

are we therefore to take this evidence as proof of the existence of telepathy? Then *a fortiori* we must accept the evidence in favour of witchcraft as proof of its efficacy, for the evidence in favour of witchcraft is incomparably the stronger.

Immense numbers of our beliefs are based on evidence of hearsay; and as it is manifestly open to more sources of error than either of the other kinds, it is incumbent on us to examine it with some care. It is more open to sources of error than the other kinds because all evidence, including that of hearsay, is ultimately derived from experience or from reasoning, and hearsay evidence has additional sources of error in the untrustworthiness of the witness, either from bias, or from deliberate intention to deceive, or from defect of memory, or from other causes.

With respect to every assertion, the first necessity is that it shall be understood in the same sense by both the asserter and the recipient, and this is often not the case. The ancients asserted that all swans are white. A modern zoologist will assert that all swans are not white—that in fact some swans are black. Either assertion may be true or false, according as it is understood. If by 'swans' we mean the familiar European species, the ancients were right; but if we include in the term 'swans' birds that are sufficiently like the European species to be included in the same genus, and extend the name so as to cover this genus, then the moderns are right and the ancients are wrong. Again, there is another sense in which both are wrong. No swans are wholly white or wholly black. The legs and beak of the white swan are not white, and the beak of the black swan is not black. Still, it would be pedantic and unnecessary to deny, on account of these exceptions, that the one is white or the other black. Neither statement is strictly accurate; but this does not matter, because both asserter and recipient are quite aware of the exception, and both understand the assertion in the same sense. If I assert that all gnats bite, the

assertion is true in one sense and false in another. It is true that gnats of every species bite, but the males of some species do not bite; and while it is true that the females of every species bite if they get the chance, many individual female gnats never do get the chance, and therefore in this sense all female gnats do not bite. Still, though exception may be taken to the mode of expression, the mode of expression is of no importance as long as both parties understand it in the same sense.

Having ascertained that we understand the assertion in the sense in which it is meant, the next question we are to ask ourselves is, Is it true? It may be true or false, and if false, it may be false with or without the knowledge of the asserter; in other words, it may be a lie or a mistake; and if a mistake, it may be a sane or an insane mistake—it may be a sane mistake or a delusion.

The main questions that are to be determined with respect to the accuracy of a witness are two: first, Is he speaking the truth as far as he knows it? and second, Does he know the truth? Even these questions are often confused with one another, and the subsidiary questions that are involved in each of them are still more often confused together. It is necessary therefore to examine them with care. Muddleheaded and ignorant persons often assume that when we doubt the accuracy of an assertion we are aspersing the good faith of the asserter. It should not be necessary to repudiate any such intention or any such consequence. Nothing is more frequent in the lives of us all than to hear some extravagant and incredible assertion made in perfect good faith by a thoroughly honest witness. It should not be necessary to show that in questioning the accuracy of an assertion we may be convinced of the honesty of the asserter; but it is necessary, because those who make, in perfect good faith, an assertion that is on the face of it questionable or incredible, that they cannot know to be true or ought to know is false, are the very persons who regard a doubt thrown on the accuracy of their assertion as an aspersion thrown on their

good faith. Here I shall treat the two subjects as entirely distinct, as in fact they are.

The first question we have to determine with respect to testimony is whether the witness is speaking the truth as far as he knows it. Is he a witness of truth, asserting what he believes to be true? or is he wilfully lying? or is he making his assertion recklessly and at random, neither knowing nor caring whether it is true or false? As far as they can be determined at all, these questions are to be determined by the following considerations:

1. What is the witness's record for truthfulness?
2. What is his responsibility?
3. What is his interest in getting his assertion accepted?

1. What is the record of the witness for truthfulness? If his previous record for truthfulness and carefulness is good, that must go some way towards satisfying us that he is truthful and careful on the present occasion. This is unavoidable, and in accordance with the general principle of induction laid down in the last chapter, that what has been found constant in experience will continue to be constant; and this inference we make with a confidence proportionate to the number of uncontradicted experiences. This consideration goes some way in determining us to place confidence in the truthfulness of the witness, but it does not go very far. For in the first place, the number of our experiences of the testimony of the witness proving true may not be great. In comparison with what is necessary for a confident induction it cannot be very great. It cannot be nearly as great as, for instance, the number of occasions on which swans have been found to be white. In the second place, the conditions may not be the same. On the previous occasions on which the witness has been found truthful he may have had no interest in being otherwise; on the present occasion, he may have a powerful interest, and this interest may be present though it is by no means obvious, or even probable. In the third

place, we may be mistaken in our estimate of the previous record of the witness. We may have supposed on previous occasions that he was telling the truth, when in fact he was not. In the fourth place, the character of the witness may alter, and a previously truthful person may become addicted to lying, an experience that is unusual perhaps, but that is by no means unknown. In this connection I may relate an experience of my own. I was once associated for several years—at least eleven—with a very competent woman, an officer in institutions with which I was connected, and had almost daily opportunity of testing her character with respect to truthfulness. My experience of her was such that I came in course of some years to place almost implicit confidence in her assertions, and to regard her as a very truthful person. After ten years of close acquaintance I detected her in an impudent lie, and thereafter my confidence in her veracity was completely destroyed. I do not think I am a very credulous person. At any rate, I am less credulous than Sir Oliver Lodge, for after this one experience of lying I withdrew my confidence from the witness, and never again believed an assertion of hers unless it was corroborated; but Sir Oliver Lodge still places faith in Eusapia Paladino, and although he knows that she has been detected in impudent trickery with respect to some of her 'manifestations,' he is confident that others of them are 'of an unusual and supernatural kind' because he cannot explain how they occur.

In view of my experience with the female officer in question, from whom I withdrew my confidence when I found she lied, and in view of Sir Oliver Lodge's experience with Eusapia Paladino, from whom he did not withdraw his confidence when he found she lied, I am not in the least impressed by the certificate of truthfulness that Mr. William James gave to Mrs. Piper. She may be the most truthful person in the world, but it does not prove her to be so that she paid Mr. William James a visit of a week at his country house in New Hampshire, and that he then learned to know her personally better than ever before,

and was confirmed in the belief that she is an absolutely simple and genuine person. I have had the same experience, not for a week only, but for ten years ; and yet I was deceived.

The courts of law of this and other countries have had incalculably numerous experiences, extending over centuries, in the estimation of testimony ; they have cultivated to as high a pitch as it can be carried the art of estimating the truthfulness and trustworthiness of testimony ; and courts of law are guided and influenced in this matter very much indeed by the record of the witness for truthfulness. If a witness is caught out in a lie, he is discredited in the court, not only in the particular matter in which he is proved to have told a lie, but in everything he says. The whole of his testimony is tainted. No confidence is placed in him. This practice is the result of generations of experience among men and women of all classes, of all countries, of all degrees of education, of all dispositions, and of all professions. The invariable rule is that if a witness is detected in a deliberate lie, that witness is not to be believed in anything he may say, but especially he is not to be believed in anything else he may say on the matter about which he has already lied. No counsel would ask the jury to believe the testimony on such a matter of such a witness. No judge would fail to warn the jury to disbelieve such evidence. Even without such judicial warning, no jury would believe it. And judge, counsel, and jury are following the practice by which the rest of mankind regulates its estimate of truthfulness. The only exception to this otherwise universal rule is that of the spiritualists. Mr. Myers continued to believe and employ the medium who was proved to have deceived him : Sir Oliver Lodge continues to place confidence in the genuineness of the manifestations produced by Eusapia Paladino. In this the spiritualists set at naught the unanimous opinion and the universal practice of the rest of mankind. They may be right in doing so, but the probability is against them. *Securus judicat orbis*

terrarum. The unanimous opinion of the whole world is apt to be right. At any rate, it cannot be ignored. It cannot be airily waved on one side by Sir Oliver Lodge and Sir Conan Doyle as of no consequence.

If, then, the previous record of a witness for truthfulness is good, this should be taken into consideration in estimating the truth of his evidence on any subsequent occasion. It should be taken into consideration, but it should not be regarded as conclusive. It is evidence, but it is not proof. We may be right as to his previous truthfulness, or we may be wrong; and even if we are right, the present occasion is not the same as the previous occasions. The witness may now have motives for lying which he had not before; and even if we are right about his previous character, that character may have changed.

2. The next question we are to ask is, What is the responsibility of the witness? In other words, how much would he suffer in reputation and in other ways by being detected in a lie? Everyone must suffer to some extent from such detection, and to this extent everyone has an interest in telling the truth; but some people would suffer much more than others, it may be because they are more sensitive to the opinion of other people, and cannot bear to be reduced in estimation; it may be because of their public position, which would suffer, and their future public career, which would be imperilled, by detection; it may be that they would bring discredit not only upon themselves, but on the body to which they belong, as in the case of the clergy; it may be because of the publicity of the occasion, owing to which their reputation would suffer in the estimation of many, or perhaps of the whole country. For these reasons we are apt to place great reliance on the truthfulness of public men speaking on public occasions; and though our faith is sometimes found to have been unwarranted, the rule is a wholesome one, and is generally justified. If we apply this test to the truthfulness of the average medium, we do not find it of much value. I am not saying that a medium is necessarily

untruthful, but it is undeniable that an untruthful medium suffers very little in reputation from being known to have lied. His or her performances are usually conducted in private. His or her career does not usually suffer from the detection of untruthfulness. Sometimes it does, no doubt. Home had to disgorge a large sum of money—£30,000, I think—and Slade was prosecuted and driven from the country; but many mediums, of whom Eusapia Paladino is a conspicuous example, continue to practise and to prosper after they have been detected in gross fraud. Nor do they suffer much in the estimation of those whose opinion it is to be presumed that they value. The people who attend the sittings of mediums do not withdraw their confidence from a medium after he or she has been convicted of fraud. They either regard the lie as exceptional and of no importance; or they attribute it, not to the medium, but to the lying spirit by whom the medium is controlled; or they look upon it charitably as a substitute for a genuine manifestation that would not come off, a substitute amiably tendered by the medium to save her audience from the pangs of disappointment. In any case the medium does not suffer in reputation in the estimate of her devotees, and therefore this safeguard, which acts on most people to keep them to the path of truth, is absent in the case of mediums.

3. The third factor that we have to consider in estimating the truthfulness of a witness is whether it is more to his interest to tell the truth than to tell a lie, and how powerful this interest may be. In using the term interest here, of course I do not use it in the narrow sense of pecuniary interest alone. A man may tell a lie or do anything else in the interest, not only of his pecuniary advantage, but of his importance in the eyes of other people, and this is a very frequent motive for lying; in the interest of his consistency, and this also is a very frequent motive. Having once publicly proclaimed his power, or his opinion, or his intention, or what not, his self-esteem is engaged and his reputation is engaged, and he has a very strong

interest in proving that he does possess the power, that his opinion is correct, that he has carried out, or can carry out, his intention, and so forth. Of course there are many who will tell the truth to their own hurt, all honour to them for doing so ; but that there are more who will tell a lie to their own profit will scarcely be denied ; and short of telling a thumping lie in downright Dunstable language, the temptation to suppress the truth or part of the truth, to suggest more or less forcibly, more or less directly, what is false, or what is not the exact truth, is too notorious and too frequently yielded to to need any insistence.

It cannot be denied that mediums have a very strong interest, in all the senses of this word, in telling lies upon occasion ; and the interest is not limited to the mediums, but extends to their supporters also. By their own showing, the mediums cannot command their manifestations. These appear and disappear, come and go, in the most capricious manner. A spirit will be voluble and communicative and expansive at one hour, and in the presence of one set of people, and the entrance of a single sceptic like Sir James Crichton Browne will so offend him that he goes off in a huff, and the failure of the rest of the sitting is due 'to the offensive incredulity' of the stranger. Queer people, these spirits ! One would have expected the presence of a known sceptic to put them on their mettle, and rouse them to give some manifestation that should compel conviction even in the most doubting Thomas ; but not a bit of it. They are so tetchy and so easily offended that when doubt is thrown upon their existence, instead of taking steps to remove the doubt, they run away. However, we must take the spirits as we find them. Some of them have been bold enough and courageous enough during their mortal life, but when they have 'passed over' they are all affected by the same contemptible pusillanimity, and will run away any day rather than attempt to convince a sceptic. They can surely not consider, when they do so, how great a temptation they are placing before their medium to fake a manifestation that

can no longer be obtained by honest means. They are enlisting on the side of dishonesty all the varied interests of the unfortunate medium. Pecuniary interest, self-importance, reputation, the laudable desire that those who hunger and thirst after manifestations shall not go empty away, all assail the virtuous medium with a battery of temptation. Is it surprising that he sometimes falls? Is it surprising that he sometimes fakes? All honour to him that the temptation is not always successful. Sometimes after the spirit has basely deserted his medium, nothing happens, as indeed nothing should happen; but sometimes, alas! the medium succumbs, and fakes a manifestation; and worse still, sometimes he is found out; but even then he is not much damaged in the eyes of his devotees. More charitable than the scoffing worldling, they can make allowances for the weakness of human nature. After all, a medium, in spite of his supernatural endowments, is at bottom only a fallible human being, and as Dr. Johnson said, 'Depend upon it a fallible being will fail somewhere.' The medium fails in honesty; but should we desert him for this? Treat every man according to his deserts, and who shall 'scape whipping? Let us pass the occasion over in silence, and come again when the spirits are in better form.

Nor is it only the medium who is assailed by the temptation of interest. The devotee also has his share of the temptation. It is true he has no pecuniary interest, but, as we have seen, this is not the only thing included under interest, and his self-esteem and reputation as a man of intelligence are very deeply engaged in upholding the genuineness of mediumism and of all its manifestations. When he has once given his adhesion to it, and become identified with it in the minds of his fellows, he cannot afford to have it exposed as an imposture, supposing that it is an imposture; and even if some parts of it are proved beyond the possibility of his denial to be impostures, his self-respect is engaged to minimize these parts as much as possible, to explain away difficulties, to reconcile discre-

pancies, to account for omissions, in short, to make out as good a case as he can ; and when one approaches a subject in this spirit, the temptation to make the crooked straight and the rough places plain is, to poor weak human nature, almost, if not quite irresistible. There need be no invention : there will not be any violent wrenching of the facts ; but what is barely possible is laid down as probable ; what has some plausible probability is recorded as most likely ; above all, there is a constant confusion between opinion and fact, between the evidence and the interpretation of the evidence. What has been testified by a witness who has never been cross-examined as to that particular occurrence, and whose cross-examination on other testimony has proved unsatisfactory, is accepted as true, and referred to as indisputable fact. A daring surmise is postulated as a certain explanation. Let me give a few instances from Sir Oliver Lodge's book on *The Survival of Man* (eighth edition).

' In her case [Mrs. Newnham's] the hand wrote matter not in the writer's mind, and which she did not feel that she was writing. Her hand wrote while she was taking the attention of her own conscious mind away from her hand and letting it be guided by her subconscious or some other mind ' (p. 90). Here Sir Oliver Lodge asserts as a fact what he could not possibly know. No one but the person concerned can know what is going on in that person's mind. Mrs. Newnham may have known, or may have believed, that she was taking the attention of her own conscious mind away from her hand, and all the rest of it, but Sir Oliver Lodge can certainly have known nothing whatever about the matter beyond what Mrs. Newnham told him. Yet he asserts it positively as if it were a matter that he himself knew. By the form of his assertion he pledges his own word for it. Mrs. Newnham may have said it, but it does not appear that she said it to Sir Oliver Lodge ; and if she did, she is a witness, and her evidence cannot be admitted without cross-examination. In this case we have indisputable proof that Sir Oliver Lodge has

recorded on his own authority, as undoubted and undoubted fact, that which he has not himself observed. What guarantee have we that he has not so recorded other quasi-facts on no closer acquaintance with them? Even supposing, what I have no means of deciding one way or the other, that Mrs. Newnham was a witness of truth as far as she knew it, we have no guarantee that she did know the truth. We have no guarantee that she did in fact take the attention of her own conscious mind away from her hand; and however firmly she may believe she did, I, well knowing how people may be deceived in such matters, should not accept her assurance without cross-examining her.

‘The look of ecstasy on Mrs. Piper’s face at a certain stage in the waking process is manifestly similar to that seen on the faces of some dying people; and both describe the subjective visions as of something more beautiful and attractive than those of earth’ (p. 114).

As a medical man of many years’ residence in medical institutions, I am sure I have seen very many more dying people than Sir Oliver Lodge has, and I have never yet witnessed a look of ecstasy on the face of a dying person. I have asked old and experienced nurses who have seen many more people die than I have, and none of them will say that she has seen a look of ecstasy on the face of a dying person. Dying people often murmur unintelligibly, but neither I nor any nurse I have been able to consult has ever heard a dying person describe subjective visions of something more beautiful and attractive than those of earth. People who die slowly of disease almost always lose much of their consciousness a considerable time before death, and when they are so near death that they can be said to be certainly dying, they have, as far as appearance goes, either no consciousness at all, or so little that it compares with full consciousness as the light of the moon in its last quarter to the glare of the sun at noon. People in such a condition are speechless, and unable to describe any visions, even if they experienced any visions, which is

in the last degree unlikely. This is not a criticism on a trivial point of detail. Mrs. Piper's look of ecstasy is adduced by Sir Oliver Lodge to assimilate her trance condition to the condition of the dying, and so to render more likely her communications with the dead. This is one of the rare instances in which we are able to test the accuracy of Sir Oliver Lodge's testimony, and it does not encourage us to place reliance on his testimony when we cannot test it.

'The extra lucidity of the dying is a thing so often asserted that it has become almost a commonplace' (p. 113). Yes, and so is the appearance of the sea-serpent, the ill-luck that attends seeing the new moon through glass, the influence on the weather of changes of the moon, the causation of canker in fruit-trees by the sourness of the subsoil, the happy month that follows the consumption of a mince-pie before Christmas, and many other things. They are so often asserted that they have become altogether commonplaces; but they are not taken by scientific men, not even by professors of electricity, as scientific evidence of scientific fact. However, anything will do to corroborate the belief in communications from the dead.

'Simple events occurring elsewhere during the sitting were also detected by Dr. Phinuit in their case, better than in any other I know of' (p. 179). It is here categorically asserted as a fact known to Sir Oliver Lodge that these events were detected by Dr. Phinuit, Dr. Phinuit being the alleged spirit that controls Mrs. Piper. Sir Oliver Lodge frequently speaks of Dr. Phinuit with the complete assurance of his being a real person. Thus: 'A chair was handed to Phinuit by me' (p. 177). 'After some difficulty and many wrong attempts Dr. Phinuit caught the name' (p. 181.) 'Dr. Phinuit has a keen "scent"—shall I call it?—for trinkets or personal valuables of all kinds. He recognized a ring which my wife wears as having been given "to me for her" by a specified aunt just before her death; of which he at another time indicated the cause fairly well. He called for a locket,' etc., etc. Who would

suppose on reading this that the person who did these things was Mrs. Piper, and that we have no evidence whatever beyond her assertion that it was not she but 'Dr. Phinuit,' her familiar spirit, acting through her? She has another familiar named Rector, of whom Sir Oliver Lodge speaks in much the same way.

'The object of this ingenious and complicated effort [the effort of the same spirit to communicate different parts of the same subject through different mediums] clearly is to prove that there is some definite intelligence underlying the phenomena, distinct from that of any of the automatists, by sending fragments of a message or literary reference which shall be unintelligible to each separately,' etc. 'And the further object is evidently to prove as far as possible by the substance and quality of the message, that it is characteristic of the one particular personality who is ostensibly communicating, and of no other.' We see that Sir Oliver Lodge knows. He does not put this forward as a speculation, plausible or not, that may or may not account for the 'phenomena.' He takes for granted the continued existence of 'discarnate intelligences,' that is, of the souls or ghosts of his dead friends; he takes for granted that they are seeking to 'communicate'; he takes for granted that the utterances of the mediums come not from them, but from his dead friends, who are using the bodily organs of the medium for the purpose of communication; he takes for granted that the different communications of different mediums fit together in such a way as to show that they come from the same 'control,' in other words, from the same dead man. He takes all this for granted, and having made these moderate assumptions he then proceeds to lay down as an obvious fact the motive that influenced the dead man in taking all this trouble. And this is 'scientific' investigation by a 'scientific' man! It seems to me that an unscientific investigation by an unscientific man, who was resolved to stick at nothing in the matter of making wild assumptions, might produce a very similar result;

in fact, the only investigations I know of that will compare with these of Sir Oliver Lodge are those of Matthew Hopkins, the Witchfinder General.

It does not appear from anything in Sir Oliver Lodge's books that he is acquainted with the proceedings of his great predecessor, or that he has any knowledge at all of the wonders of witchcraft. This is in one respect unfortunate, for it is always advisable in studying any subject to know what has already been done in the same field of knowledge. Sir Oliver Lodge might have had the advantage of beginning where Matthew Hopkins left off. As it is, he has to go over the same ground again to reach the same conclusions. What would he say, I wonder, to anyone who should commence electrician by repeating the experiments of Faraday, and pursuing his investigations as though Faraday had never lived and never studied the subject. Yet this is what he does in his new field of investigation. As he follows the same methods in the same field, it is not surprising that he arrives at the same results. Indeed, his results are so similar that if the reputation of Sir Oliver Lodge did not stand so high as to place him above the reach of suspicion, he might be suspected of plagiarism. I believe him to be wholly incapable of such baseness. I believe that the similar results obtained by Sir Oliver Lodge and Matthew Hopkins are merely an example of the truth that great wits jump together, or rather, that investigations conducted in different ages by similar means into similar phenomena lead to similar results, so that each supports, reinforces, and corroborates the other. Each of them arrives independently at the conclusion that the person called by the one a witch and by the other a medium is swayed, influenced, and informed by familiar spirits. The familiar spirits identified by Sir Oliver Lodge are Emperor, Rector, Doctor, Prudens, and so forth; refined, dignified, learned, and cultured spirits, conformable with the refinement of the ladies on whom they attend, and with the dignity, learning, and culture of the eminent professor who discovers

them. In a ruder age, vulgar women were haunted by vulgar spirits, which were discovered by a vulgar witchfinder; and conformably, the spirits are the vulgar crew denominated Pyewhacket, Peck-in-the-crown, Sack-and-Sugar, Vinegar Tom, and Grizell Greedigut. *Mutatis mutandis*, the investigations of the one inquirer lead to the same results as those of the other, and I for my part no more doubt the reality of the spirits discovered by Sir Oliver Lodge than I doubt the reality of those discovered by Matthew Hopkins, the Sir Oliver Lodge of the seventeenth century.

The deplorable ignorance, prejudice, and bad taste of Sir Walter Scott led him to say that the vulgarity of these epithets shows what a flat imagination Hopkins brought to support his impudent fictions. We may well congratulate ourselves upon the march of Science, which renders such a comment inappropriate and inapplicable to the familiar spirits of the present day.

And after all, can we be sure that Sir Oliver Lodge's spirits are not really the same as those of Matthew Hopkins? Sir Oliver Lodge has the natural distaste of the refined and cultured (and shall we not say of the scientific also?) for common names. He eschews the names 'ghost' and 'spook,' and substitutes 'discarnate intelligence.' He rejects the title 'supernatural,' and replaces it by 'supernormal.' His book treats throughout of the miraculous, but he carefully avoids using the word. What has for two generations been called 'spiritualism' he calls 'telepathy,' 'telergy,' and so forth. How do we know that the spirits discovered by Sir Oliver Lodge are not the same as those discovered by Matthew Hopkins, humouring this little foible of Sir Oliver Lodge's, and calling themselves by other names to please him, or being called by him by other names? What the vulgar call Spirit of Salt is called by the scientific man Hydrochloric Acid; is it not possible that the spirit that the vulgar Hopkins calls Sack-and-Sugar should be called by the scientific Sir Oliver Lodge Emperor? I make no assertion. It is confessedly

only a suggestion, and must be taken for no more than it is worth. Let me quote here another of Sir Oliver Lodge's admirable aphorisms.

'Be not unduly sceptical about little things. An attitude of keen and critical inquiry must continually be maintained, and in that sense any amount of scepticism is not only legitimate but necessary. The kind of scepticism I deprecate is not that which sternly questions and rigorously probes: it is rather that which confidently asserts and dogmatically denies.' The suggestion I make is only a little thing: I would beg the reader not to be too sceptical about it. I do not confidently assert that Sir Oliver Lodge's spirits are Matthew Hopkins' spirits under other names, and the reader should not dogmatically deny it.

CHAPTER IV

EVIDENCE OF HEARSAY (*continued*)

HAVING satisfied ourselves of the good faith of the witness, and assured ourselves that he is speaking the truth as far as he knows it, the next inquiry we are to make is, Does he know the truth? or, at any rate, What opportunity has he had of knowing the truth, and how has he utilized it? These questions are evidently of the utmost importance. It is of no avail to be assured that the witness is a witness of truth as far as he knows it, unless we can be assured also that he does know the truth, or at least that he has had opportunity of ascertaining it, and has utilized that opportunity wisely and well.

This is obviously of the utmost importance; but in this respect common practice is so extremely lax that it is clear the importance is not recognized in the least. In common practice assertions are passed from mouth to mouth, become current, become generally accepted as true, without any attempt on the part of those who receive them and pass them on to ascertain what opportunity their informant had of knowing; what was the original source of the assertion; or what ground the original asserter had for his belief. This practice has always prevailed, and some of the grotesque beliefs that have been held on no better authority than that 'They say' are enumerated in the long list of Sir Thomas Brown's Vulgar Errors. But Sir Thomas Brown's list was by no means exhaustive even in his day, nor was he himself by any means free from the belief in Vulgar Errors other than those that he so stigmatized; and in spite of his exposure of a great many there are still a great many vulgar errors prevalent and accepted with implicit faith by the community on no better authority

than that of what 'They say.' The whole mass of popular superstitions as to lucky and unlucky practices and events rests upon this basis.

There is another class of very numerous beliefs that are accepted and held with the same tenacity upon grounds that do formally acknowledge the insufficiency of mere authority, and do pretend to rest upon the testimony of those who are not only honest witnesses, but also are supposed to know the truth: who are supposed to have opportunities for ascertaining the truth, and to have availed themselves of these opportunities. But the supposition that the witness has these opportunities, or that he has utilized them, is often without any foundation.

There is a prevalent belief, for instance, that cigarette smoking is more injurious to the smoker than the smoking of pipes, and it is usually alleged that the belief must be true because 'doctors have said it.' I have never myself met a doctor who would commit himself to this opinion, but supposing a doctor has said it, there is no reason to suppose that his assertion was founded on any better ground than that 'They say' it is so. It is supposed that a doctor, because he is a doctor, must be in a position to know; but anyone who gives a moment's thought to the matter must see that it cannot be determined without a very long and wide course of experimentation, or a still longer and wider course of observation directed especially to the point in question, such as has certainly never been undertaken.

Similarly, the belief that canker and other diseases in fruit trees are due to sourness in the subsoil is accepted on the assertion of gardeners, for it is assumed that gardeners 'must know.' But why must they know? I am pretty sure that no gardener but myself has ever tested the subsoil beneath cankered trees to discover whether it is sour or not; and besides this, there is no reason to suppose that if it were sour it could produce canker, which is well known to be due to a very different cause.

In the same way, most uninstructed persons hold the view that what a scientific man says on a scientific subject is entitled to belief, because the scientific man 'must know.' But the scientific man may not know anything whatever of any scientific subject outside of his own little speciality; and even in this, if he is really a scientific man, and not merely a man engaged in a scientific subject, he will often hesitate to express an opinion.

It is very unsafe to assume, on the ground that a man studies some portion of a subject, that he must have studied some other portion of that subject; it is still more unsafe to assume, because he has studied some subject that he has studied another. It is unsafe to assume, on the ground that he has had an opportunity of studying a subject, that therefore he has studied it; and it is unsafe to assume, if he has studied it, that he has studied it with the care and openness of mind necessary for arriving at a trustworthy conclusion. For all these reasons it is extremely unsafe to assume that because Sir Oliver Lodge is a high authority upon electricity, therefore his conclusions about ghosts must be well founded and worthy of adoption. Probably few people would maintain that they adopt his conclusions about ghosts on the ground that he is an authority upon electricity, but there is no doubt whatever that this is in fact the ground on which a very great many people do adopt his conclusions.

When we have to depend on testimony for our beliefs, the first thing is, as has been said, to determine whether the witness is a witness of truth as far as he knows it: the second is to discover whether he does know the truth, or at any rate whether he has had opportunity of ascertaining it, and has utilized that opportunity in such a way as to avoid error.

In order to discover this, we must first ask, Did he obtain his information first-hand by actual observation of the facts, or did he obtain it second-hand by information given to him by others?

If he obtained his information first-hand, by direct

observation of the facts, and though he is an honest witness and recounts what he genuinely believes to be true, still it would be rash to accept his evidence without further inquiry. It would be especially rash if the facts to which he testifies are discordant with the general experience of the human race, and in opposition to known laws of nature. Before we can accept his testimony we must, as men of ordinary prudence, make the following inquiries :

1. What was the nature of his opportunities of studying the facts ?
2. Is he familiar with the class of phenomena to which the facts belong ?
3. Did he come to the investigation with an open mind, or was the matter prejudged ?
4. What precautions did he take to secure the accuracy of his observations ?
5. Are his interpretations of the evidence justified ?

It is obvious that these inquiries are best made by the examination of individual instances of Sir Oliver Lodge's inquiries and experiments, and that for the most part they do not admit of general answers until this has been done ; but one or two general observations may be made even at this stage.

The second question may be answered definitely in the negative. Sir Oliver Lodge is not familiar with the class of phenomena to which the facts belong. His life's work has been in the physical laboratory, and his life has been spent in the examination of physical forces manifested by their action on metals, and on other matter destitute of life, of intelligence, of intention, of volition, of desire, of feeling ; incapable of wilful deceit ; incapable of mischief ; unmoved by vanity, self-importance, desire of pecuniary gain, or of attracting attention and interest ; destitute of humour ; unswayed by emulation, such as the pitting of wits against wits ; unmoved by the ambition of achieving an intellectual triumph over a very eminent professor of very high reputation. He is quite unaccustomed to work

on material that possesses, or that may possess, any of these qualities, and in the honesty, simplicity, and ingenuousness of his heart would be the last person in the world to ascribe some of them to anyone, much less to anyone whom he knows personally, esteems, and likes. As I have pointed out on an earlier page, the class of persons most competent to investigate phenomena of this description is that of professional conjurers, belonging to a profession as different as it is possible to imagine from that of Sir Oliver Lodge. Some of the phenomena appear to have been produced by the mediums while they were in an hypnotic condition; and to investigate these phenomena the services of a professional hypnotist should be engaged; but if we were to search the world through we could scarcely find a person less fitted by previous training and experience to investigate them than a professor engaged in the study of electricity; and any opinion he might pronounce about them I should consider as worthless as the opinion of a professional conjurer or a professional hypnotist on some abstruse problem in electricity. If a professor of conjuring who had never studied electricity further than is necessary to change one electric light globe for another were to publish a fat volume of 400 pages to prove that certain phenomena could not be produced by electricity, but must have been produced by some other means, I wonder how much attention Sir Oliver Lodge would pay to the book. If this book were to be sold by thousands and tens of thousands, and were to convince tens of thousands of people that the phenomena in question could not possibly be produced by electricity, although they very closely resemble the phenomena that are unquestionably produced by electricity, I wonder what Sir Oliver Lodge would think of people who could be convinced by the weight of such an authority. Supposing Sir Oliver Lodge were himself actually to produce some of these phenomena by means of electricity, and to explain how electricity produced them, what would he think of the conjurer who refused to admit his demonstration or

to be convinced by it? *De illo fabula narratur*. He is himself in the position of that conjurer.

The third question also may be answered very positively in the negative. Sir Oliver Lodge does not come with an open mind to his investigations of telepathy and ghosts. Again and again he assures and reassures us upon this point. He opens his preface to *The Survival of Man* by saying 'The author's conviction of man's survival of bodily death—a conviction based on a large range of natural facts—is well known'; and ends it by saying 'The present book is intended to show that telepathic communication may come through from the other side, and that this view is entitled to critical and careful consideration.' By 'the other side' it appears that Sir Oliver Lodge means the dead. What is entitled to careful and critical consideration is in my opinion not so much the view, as the evidence on which the view is founded; and I propose to give to this evidence consideration as careful and critical as I can. Again, in *Raymond*, p. 86, he says the medium goes into a trance and is then subject to what is called 'control,' speaking or writing under the guidance of a separate intelligence technically known as 'a control.' And again, 'I must assume it known that messages purporting to come from various deceased people have been received through various mediums.' 'It is being made clear, I hope, how the fact of thought-transference,' etc. (*Survival of Man*, p. 61). 'I am prepared, however, to confess that the weight of testimony is sufficient to satisfy my own mind that such things [as telepathy at great distances] do undoubtedly occur' (*ibid.*, p. 70). 'Individuals are known who can by an effort of will somehow excite the brain or sensorium of a person at a moderate distance . . . so that this second person imagines that he hears a call or sees a face' (*ibid.* p. 71). 'That this community of mind or possibility of distant interchange or one-sided reception of thoughts exists, is to me perfectly clear and certain' (*ibid.* p. 91). 'We are driven to the only remaining *known* (*italics in original*)

cause in order to account for them [the facts]: viz., thought transference, or the action of mind on mind independently of the ordinary channels of communication' (*ibid.*, p. 172).

Such expressions are frequent throughout both books, and prove beyond the possibility of doubt that whatever Sir Oliver Lodge's attitude towards the phenomena may once have been, he now 'investigates' them with a pre-determination to arrive at a foregone conclusion. That 'investigations' undertaken in such a spirit are certain to lead to this foregone conclusion needs no demonstration. It has been well said that we ask for advice, but we want approbation. Sir Oliver Lodge 'investigates' ostensibly to test his conclusion, really to find support for it. In this he sins against the light, and against a principle that he professes to follow, for in another place he quotes with approval, and implies that he adopts in practice, the admirable dictum of Huxley:

'The development of exact natural knowledge in all its vast range, from physics to history and criticism, is the consequence of the working out, in this province, of the resolution to "take nothing for truth without clear knowledge that it is such"; to consider all beliefs open to criticism; to regard the value of authority as neither greater nor less than as much as it can prove itself to be worth.'

It is on this principle actually applied in practice, and not merely worshipped with lip-service, that I am endeavouring to conduct this inquiry. Sir Oliver Lodge is familiar with the words, for he quotes them in a communication to *Bedrock* (October, 1912), and I have no doubt he applies it in his practice in electrics, or he could not have attained the success he has attained in this field; but when he enters on the investigation of ghosts and occult phenomena he casts it away and tramples on it in practice, though he still continues to pay it lip-service. He is most punctilious in enjoining upon other investigators the value and the necessity of following the true scientific method of investigation.

‘ One of the things I want to impress upon all readers, especially upon those who are gifted with a faculty for receiving impressions which are worth recording, is that too much care cannot be expended in getting the record exact. Exact in every particular, especially as regards the matter of *time*. In recording a vision or an audition or some other impression corresponding to some event elsewhere, there is a dangerous tendency to try to coax the facts to fit some half-fledged preconceived theory and to make the coincidence in point of time exact.

‘ Such distortions of truth are misleading and useless. What we want to know is exactly how the things occurred, not how the impressionist would have liked them to occur, or how he thinks they ought to have occurred. If people attach importance to their own predilections concerning events in the Universe, they can be set forth in a footnote for guidance of anyone who hereafter may think of starting a Universe on his own account: but such speculations are of no interest to us who wish to study and understand the Universe as it is ’ (*Survival of Man*, p. 21).

‘ Every precaution should be taken to put far from us the temptation or the possibility of improving the original record after the fact to which it refers has occurred, if it ever does occur ’ (*ibid.*, p. 22).

‘ Guesses at *a priori* likelihood are worthless; if the question is to be answered it must be attacked experimentally ’ (*ibid.*, p. 91).

‘ I have no wish to intrude speculations upon you . . . I wish to assert nothing but what I believe to be solid and verifiable facts ’ (*ibid.*, p. 71).

‘ One must not shut one’s eyes to the *possibility* that in pursuing a favourite hypothesis one may after all be on the wrong tack altogether ’ (*ibid.*, p. 180).

Another convinced telepathist, Mr. J. Arthur Hill, begins an article thus: ‘ Modern science is based on observation and experiment. . . . It is curious to find how

apparently unscientific an educated man can be, even in our modern times, when he goes outside his own particular province.' (*Bedrock*, Oct. 1912). It certainly is.

The remaining three questions, What were Sir Oliver Lodge's opportunities of ascertaining the facts? What precautions did he take to secure the accuracy of his observations? and Are his interpretations of the evidence justified? must be considered in the light of the individual investigation. It is impossible to examine them all here, for this book must be kept within reasonable limits. The instances adduced by Sir Oliver Lodge are very numerous and make a large book; and to examine each of them in detail would make a very much larger book, larger than the subject is worth. But if I take representative specimens on which Sir Oliver Lodge places great reliance, and which he specially commends to our notice, and examine a few, the bushel may be judged by the sample. I am no conjurer, and have no special knowledge of the kind of phenomena under consideration, and therefore my examination is not likely to be nearly as effective as that of a more skilled examiner, but the stories, as related by Sir Oliver Lodge, do not convince me, and would scarcely, I think, convince anyone who was not already convinced. Of course, if a man approaches the subject in the spirit revealed by such expressions as 'The present book is intended to show that telepathic communication may come through,' 'The fact of thought-transference,' 'The only *known* cause—viz., thought-transference,' no examination of the evidence, even if it should be totally destructive of the evidence, will have any effect on his belief. He will cry with Tertullian, 'I believe it because it is impossible.' My examination is for those whose minds, while much impressed by the evidence, while strongly inclined to believe, yet doubt whether there may not be something to be said on the other side, and would like to hear that something before coming to a final decision. Sir Oliver Lodge's narratives are related with great skill. They are

narrated with a force, simplicity, and candour, which is eminently calculated to captivate the assent of the reader. Not even a confirmed sceptic can read them without being impressed and temporarily shaken in his scepticism. There is no rhetoric, no appeal to the imagination, no persuasion. The ' facts ' are placed before us in all their bald simplicity, and we are forced, driven by their overwhelming weight, to come to the desired conclusion. It is only on subsequent consideration that we begin to doubt whether the ' facts ' are, after all, facts. It is only on reflection that the weaknesses of the evidence come one by one into view. Every one who has been in a court of law has heard a witness testify in such a manner and to such purpose that the case seems conclusively proved, and no answer, no defence seems possible ; and yet when counsel begins to cross-examine, what a different aspect the case gradually assumes ! First a doubt insinuates itself. An inconsistency appears here ; an improbability appears there ; this incongruity had not occurred to us until counsel suggested it ; that incompatibility had escaped our notice ; little by little our assured conviction crumbles down, until, when the sweating witness leaves the box, the value of his evidence is completely destroyed, and we wonder that we could ever have attached any credit to it. I did not hope to demolish Sir Oliver Lodge's evidence as completely as this, for even if it were as completely demolishable, counsel cannot destroy the efficacy of testimony unless he has some independent and additional knowledge of the case. He must have been primed by the other side, and I have not been primed. He must have had an independent account, and I have had no independent account. I was not present at these sittings, and I have no knowledge of them whatever but that furnished by Sir Oliver Lodge. I do not doubt for a moment that his account is candid and is true as far as he knows the truth ; but I doubt very much whether the account is complete. Sir Oliver Lodge was, on his own showing, looking at only one side of the question. He was gathering evidence in support of a

view that he already held, and held very strongly. It is not likely that he would see anything that told against his view, for, as explained in a previous page, we see what we look for. I do not for a moment doubt the truth of his account, but it is to be borne in mind that *Sir Oliver Lodge has not been cross-examined*. We have heard only his evidence in chief. I propose, with nothing but his own account to go upon, and therefore at a great disadvantage, to subject him to cross-examination.

I take first the earliest experiment recorded in *The Survival of Man*, one of the series of experiments that appears to have had the decisive effect of convincing Sir Oliver Lodge; and, since he recorded this particular experiment at the time in the columns of *Nature*, and now republishes it in the very forefront of his narrative, we may fairly conclude that he regards it as crucial, or at any rate that he attaches to it the very highest importance. In fact, he says, 'I wish to say strongly that the experiment was quite satisfactory, and that no reasonable doubt of its validity has been felt by me from that time to this.' Evidently, this experiment was the turning point in his conviction. I will first quote from the account published at the time in *Nature*.

He begins by speaking of the conditions under which *apparent* transference (my italics) of thought occurs, a very proper expression, indicative of the true scientific spirit, and of an honest desire to lay the facts impartially before the reader, and allow him to draw his own conclusions. But the next sentence begins: 'One evening last week—after two thinkers, or agents, *had been several times successful* (my italics) in instilling the idea of some object or drawing, at which they were looking, into the mind of the blindfold person, or percipient,' etc. Alas for the scientific spirit! Alas for the impartiality! How fast they fade away! Sir Oliver Lodge's mind is already made up, in June 1884, though he began his investigations only in the preceding winter, and not only is he already himself convinced, but he adopts a mode of narration eminently

calculated to insinuate conviction into the minds of his readers.

I omit the discursive remarks and speculations interspersed in the narrative, but reproduce everything that is germane to the experiments.

‘ In reporting on the experiments conducted by me, at the invitation and with the appliances of Mr. Guthrie, I wish to say that I had every opportunity of examining and varying the minute conditions of the phenomena, so as to satisfy myself of their genuine and objective character, in the same way as one is accustomed to satisfy oneself as to the truth and genuineness of any ordinary physical fact. If I had merely witnessed facts as a passive spectator I should not publicly report upon them. So long as one is bound to accept imposed conditions and merely witness what goes on, I have no confidence in my own penetration, and am perfectly sure that a conjurer could impose on me, possibly even to the extent of making me think that he was not imposing on me ; but when one has the control of the circumstances, can change them at will and arrange one’s own experiments, one gradually acquires a belief in the phenomena observed quite comparable to that induced by the repetition of ordinary physical experiments.’

A very fair and candid exordium, and one eminently calculated to disarm any suspicions the reader may start with, and to predispose him to receive uncritically what follows.

‘ I have no striking or new phenomenon to report, but only a few more experiments in the simplest and most elementary form of what is called Thought-transference ; though certainly what I have to describe falls under the head of “ Thought-transference ” proper, and is not explicable by the merely mechanical transfer of impressions, which is more properly described as muscle-reading.

‘ In using the term “ Thought-transference,” I would ask to be understood as doing so for convenience, because

the observed facts can conveniently be grouped under such a title ; but I would not be understood as implying any theory on the subject. It is a most dangerous thing to attempt to convey a theory by a phrase ; and to set forth a theory would require many words. As it is, the phrase describes correctly enough what appears to take place, viz., that one person may, under favourable conditions, receive a faint impression of a thing which is strongly present in the mind, or thought, or sight, or sensorium of another person not in contact, and may be able to describe or draw it, more or less correctly. . . .

‘ The experiments which I have witnessed proceed in the following way. One person is told to keep in a perfectly passive condition, with a mind as vacant as possible ; and to assist this condition the organs of sense are unexcited, the eyes being bandaged and silence maintained. It might be as well to shut out even the ordinary street hum by plugging the ears, but as a matter of fact this was not done.

‘ A person thus kept passive is “ the percipient.” In the experiments I witnessed the percipient was a girl, one or other of two who had been accidentally found to possess the necessary power. Whether it is a common power or not I do not know. So far as I am aware comparatively few persons have tried. I myself tried, but failed abjectly. It was easy enough to picture things to oneself, but they did not appear to be impressed on me from without, nor did any of them bear the least resemblance to the object in the agent’s mind. (For instance, I said a pair of scissors instead of the five of diamonds—and things like that.) . . .

‘ Another person sitting near the percipient, sometimes at first holding her hands but usually and ordinarily without any contact at all, but with a distinct intervening distance, was told to think hard of a particular object, either a name, or a scene, or a thing, or of an object or drawing set up in a good light and in a convenient position for staring at. This person is “ the agent.” . . .

‘ Very frequently more than one agent is employed, and

when two or three people are in the room they are all told to think of the object more or less strenuously ; the idea being that wandering thoughts in the neighbourhood certainly cannot help, and may possibly hinder, the clear transfer of impression. . . .

‘ Most people seem able to act as agents, though some appear to do better than others. I can hardly say whether I am much good at it or not. I have not often tried alone, and in the majority of cases when I have tried I have failed ; on the other hand, I have once or twice succeeded. We have many times succeeded with agents quite disconnected from the percipient in ordinary life, and sometimes complete strangers to them. Mr. Birchall, the headmaster of the Birkdale Industrial School, frequently acted ; and the house physician at the Eye and Ear Hospital, Dr. Shears, had a successful experiment, acting alone on his first and only visit. All suspicion of a pre-arranged code is thus rendered impossible, even to outsiders who are unable to witness the obvious fairness of all the experiments.

‘ The object looked at by the agent is placed usually on a small black opaque wooden screen between the percipient and agents, but sometimes it is put on a larger screen behind the percipient. The objects were kept in an adjoining room and were selected and brought in by me, with all due precaution, after the percipient was blindfolded. I should say, however, that no reliance was placed on, or care taken in, the bandaging. It was merely done because the percipient preferred it to merely shutting the eyes. After remarkable experiments on blindfolding by members of the Society (see *Journal*, S.P.R., vol. i, p. 84), I certainly would not rely on any ordinary bandaging ; the opacity of the wooden screen on which the object was placed was the thing really depended on, and it was noticed that no mirrors or indistinct reflectors were present. The only surface at all suspicious was the polished top of the small table on which the opaque screen usually stood. But as the screen sloped backwards at a slight

angle, it was impossible for the object on it to be thus mirrored. Moreover, sometimes I covered the table with paper, and often it was not used at all, but the object was placed on a screen or a settee behind the percipient; and one striking success was obtained with the object placed on a large drawing board, loosely swathed in a black silk college gown, with the percipient immediately behind the said drawing board and almost hidden by it.

‘As regards collusion and trickery, no one who has witnessed the absolutely genuine and artless manner in which the impressions are described, but has been perfectly convinced of the transparent honesty of purpose of all concerned. This, however, is not evidence to persons who have not been present, and to them I can only say that to the very best of my scientific belief no collusion or trickery was possible under the varied circumstances of the experiments.

‘A very interesting question presents itself as to *what* is really transmitted, whether it is the idea or name of the object or whether it is the visual impression. To examine this I frequently drew things without any name—perfect irregular drawings. I am bound to say that these irregular and unnamable productions have always been rather difficult, though they have at times been imitated fairly well: but it is not at all strange that a faint impression of an unknown object should be harder to grasp and reproduce than a faint impression of a familiar one, such as a letter, a common name, a teapot or a pair of scissors. Moreover, in some very interesting cases the idea or name of the object was certainly the things transferred, and not the visual impression at all; this specially happened with one of the two percipients; and therefore, probably in every case the fact of the object having a name would assist any faint impression of its appearance which might be received.

‘As to *aspect, i.e.*, inversion or perversion—so far as my experience goes it seems perfectly accidental whether the object will be drawn by the percipient in its actual posi-

tion or in the inverted or perverted position. This is very curious if true, and would certainly not have been expected by me. Horizontal objects are never described as vertical, nor *vice versa*; and slanting objects are usually drawn with the right amount of slant.

'The two percipients are Miss R. and Miss E. Miss R. is the more prosaic, staid and self-contained personage, and she it is who gets the best quasi-visual impression, but she is a bad drawer, and does not reproduce it very well. Miss E. is, I should judge, of a more sensitive temperament, seldom being able to preserve a strict silence for instance, and she it is who more frequently jumps to the idea or name of the object without being able so frequently to "see" it.

'I was anxious to try both percipients at once, so as to compare their impressions, but I have not met with much success under these conditions, and usually therefore have had to try one at a time—the other being frequently absent or in another room, though also frequently present and acting as part or sole agent.

'I once tried a double agent—that is, not two agents thinking of the same thing, but two agents each thinking of a different thing. A mixed and curiously double impression was thus produced and described by the percipient, and both the objects were correctly drawn. This experiment has been separately described as it is important. See pages 28 and 37.

'[N.B.—The actual drawings made in all the experiments, failures and successes alike, are preserved intact by Mr. Guthrie.]'

This is Sir Oliver Lodge's account of his experiments. Convincing, is it not? Conclusive: enough to produce conviction in the most sceptical mind. The witness unimpeachable; every objection foreseen; every precaution taken; every possibility of trickery provided against; the whole circumstances under the control of Sir Oliver Lodge, who places a small opaque black wooden screen between

the percipient and the agents, who keeps the objects in an adjoining room, and selects and brings them in with all due precaution after the percipient has been blindfolded ; no mirrors visible ; even the polished top of the small table on which the opaque screen usually stood is noticed, taken into account, recognized to be a possible mirror, and sometimes covered with paper ; every alternative explanation rigidly excluded, repelled, and destroyed ; no possible explanation remaining but thought-transference. O Sancta simplicitas ! O artless maidens ! O confiding professor ! I have seen tricks more inexplicable in a booth at a country fair. A master conjurer would not stoop to perform tricks so rudimentary. He would leave them to his apprentices.

' It might be as well to shut out even the ordinary street hum by plugging the ears, but as a matter of fact this was not done.' One does not know whether to admire most Sir Oliver Lodge's honesty or his simplicity. He takes every precaution he can think of to prevent the ' percipient ' from seeing the ' object ' ; he takes no precaution worth mentioning to prevent the percipient from seeing the ' agent,' and he takes no precaution at all to prevent the agent communicating to the percipient by means of audible signals. Not thus did Sir James Crichton Browne test the performance of Blackburn and Smith. Hear his account :

' Mr. B. [in Sir Oliver Lodge's nomenclature the agent] stood behind Mr. S. [the percipient] at the distance of about a couple of yards, and gazed at the back of his head. I remember distinctly that he had his hands in his trousers' pockets and that he contracted his brows from time to time and made faces. This went on for, I suppose, about five minutes, and then Mr. S. drew on the paper before him a crude and clumsy outline of an owl. It was very different from Romanes' sketch [the drawing that was to be " transferred " by Mr. B. to Mr. S.], but it was undoubtedly suggestive of an owl.

' Some other simple experiment, I believe, followed on

the same lines and with the same approximate result ; and then it occurred to me and to Romanes that some kind of code might be in use, and we proceeded to draw a figure without a name, a sort of nondescript arabesque, simple enough, but not easily describable in words. When Mr. B. was brought into the back room and this drawing was placed in his hand, I noticed, or thought I noticed, that his face fell. He gazed at it in the usual way for a little, and then said, " This is rather complicated, I have a difficulty in fixing it in my mind." " Oh, no ! " we replied. " We can look at it, turn away, and reproduce it without difficulty." So Mr. B. was constrained to go on. He stood behind Mr. S. as before, a few minutes, and I believe that this time he made some passes in the air with his hands. Ultimately Mr. S. drew a few lines on the paper, but there was not the slightest approach to the figure drawn.

' Still further to test the code theory, it seemed desirable to give a little rope ; so the next diagram drawn was the shield from the signet ring, which Dr. Galton was wearing on his finger. After the usual procedure, Mr. S. drew the outline of a shield, but—and this is significant—the shield on Dr. Galton's ring was oval and the one reproduced was triangular ; it may have been *vice versâ* ; but of this I am sure—that Mr. S.'s drawing did not correspond in shape with the diagram which Mr. B. was supposed to have imprinted on his mind.

' By this time I was quite satisfied that Mr. S. was not effectually blindfolded, and that it was practicable for Mr. B. to communicate with him both by sight and hearing ; so Romanes and I asked permission, which was granted, to blindfold him anew. We proceeded to do so *secundum artem*. Cotton wool was procured, the sockets were packed, the ears were plugged, and a large handkerchief made all secure. After that several experiments were tried as before, but there never was the smallest response on the part of Mr. S. to Mr. B.'s volitional endeavours. There was no more flashing of images into

his mind. His pencil was idle. Thought-transference was somehow interrupted.

' Now, I can only give the impression on my mind, and I know it was the impression on the minds of Romanes and Galton. It is an impression, and must be taken for what it is worth ; and it was that the Morse alphabet was in use. I did not detect any coding, but all the circumstances were highly suggestive of it. It seemed possible that a word might be winked at the lady opposite S., who winked it on to him, who was at first not really blindfolded ; or that it might be clicked out on coins in the pockets of Mr. B., or even conveyed by the shadows of the passes. The moment that Mr. S.'s senses were thoroughly occluded, all transference stopped.

' I was invited to be critical and sceptical, and I was so. I dare say more credulously inclined people will think that my suspicions were unjust and that no trick was practised—that was clearly the feeling of some of the *Psychical Researchers* present.'

So far Sir James Crichton Browne. I also, in common with others, am invited by Sir Oliver Lodge to be critical. In *Bedrock* (Oct. 1912) he says, ' If criticisms were well informed and fair, we should, I hope and believe, welcome them. Certainly it is our earnest desire to welcome all criticism possessing these attributes.' Whether my criticism is fair or not I must leave my readers to judge, but that it is well informed is beyond question, for it is informed by Sir Oliver Lodge's own description, which I have given in his own words. We shall see if he welcomes it.

I take Sir Oliver Lodge's word for it that he had every opportunity of examining and varying the conditions, and I regret that he did not avail himself of the opportunity. As far as his own account of his own precautions goes, he might as well have taken none at all. In fact, he did take none at all that were of any use or importance or value. ' So long as one is bound to accept imposed conditions and merely witness what goes on, I have no confidence in my

own penetration,' says Sir Oliver. I have no confidence in his penetration even when he has every opportunity of examining and varying the conditions, and I will presently say why I have none. 'I am perfectly sure that a conjurer could impose upon me, possibly even to the extent of making me think he was not imposing on me.' So says Sir Oliver Lodge, and again I am heartily in agreement with him. I am perfectly sure that not only a conjurer could impose on him, but that two girls did impose on him even to the extent of making him think they were not imposing on him. 'But when one has the control of the circumstances, can change them at will and arrange one's own experiments, one gradually acquires a belief in the phenomena observed quite comparable to that induced by the repetition of ordinary physical experiment.' So it appears; but then, though one had control of the circumstances, one did not control them in the necessary direction. Though one could change them at will, and arrange one's own experiments, one did not make the changes that were necessary to exclude imposture, nor did one arrange one's own experiments in what was obviously the only way to detect imposture. In these circumstances it is not surprising that Sir Oliver Lodge acquired a belief in the phenomena observed; but when he says he gradually acquired the belief, he underrates and belittles his own performance. The whole history shows that he swallowed at once the 'experiments,' and 'phenomena,' and 'conditions' of Miss R. and Miss E. at one gulp; and lost no time over the deglutition. It was snap and swallow, and he was done. Such an exhibition of credulity has not been seen since Moses Primrose returned from the market in proud possession of a gross of spectacles with silver rims and shagreen cases. Really, when I read his naïve and innocent account of his own simplicity, I wonder if Lady Lodge ever allows him to go out in the street without a nurse to see that he does not bring home a gross of sentry boxes, or chimney-pots, or left-hand gloves, or something equally profitable.

The possibility of collusion and trickery did indeed cross his mind, but only to be dismissed, and dismissed on grounds that were perfectly convincing to Sir Oliver Lodge, but are not so to me. 'No one,' he says, 'who has witnessed the absolutely genuine and artless manner in which the impressions are described, but has been perfectly convinced of the transparent honesty of all concerned. This, however, is not evidence to persons who have not been present, and to them I can only say that to the best of my scientific belief no collusion or trickery was possible under the varied circumstances of the experiments.' He might have spared us the assurance. It was unnecessary. No one for a moment supposes that Sir Oliver Lodge would ask the world to accept, as genuine, experiments in which he thought collusion or trickery was possible. The question is not whether he believed it to be possible, but whether it was possible. And why does Sir Oliver Lodge speak of his 'scientific belief'? Is there any difference between a scientific belief and other kinds of belief, or is this not merely an *argumentum ad verecundiam*? Is it not merely an oblique and compact mode of saying 'Pray remember that I am a great authority on science, and that therefore when I say that a thing is so, receive it with submission and believe that it is so'? This may not have been Sir Oliver Lodge's intention in using the adjective, but this is the impression it conveys.

It is the 'absolutely genuine and artless manner' of the two girls that convinces Sir Oliver Lodge that they would never be so mean as to resort to trickery or collusion. Alas! he should have remembered that 'the heart is deceitful above all things, and desperately wicked'; and as to young girls, 'their throat is an open sepulchre; with their tongues they have used deceit; the poison of asps is under their lips.' This is one of those cases in which 'guesses at *a priori* likelihood are worthless; if the question is to be answered, it must be attacked experimentally.' Sir Oliver Lodge should have borne in mind his other maxim also: 'One must not shut one's eyes to

the *possibility* that in pursuing a favourite hypothesis one may after all be on the wrong tack altogether.'

Let us examine the conditions a little more closely. The eyes of the percipient were bandaged. This was not done at the instance of Sir Oliver Lodge, who very properly would not rely on any ordinary bandaging, and took no care about it and placed no reliance upon it, in which he displays a wisdom that one could wish had adhered to him throughout. The bandaging was 'done because the percipient preferred it to merely shutting the eyes.' I may be unwarrantably cynical, but it does seem to me that a voluntary proposal to be bandaged would tend to disarm any suspicion that might exist even in the mind of so unsuspecting an observer as Sir Oliver Lodge; and further, that a perfunctory bandage over the eyes does not, as Sir Oliver Lodge well knows, much interfere with vision; but it does very effectually prevent an observer from seeing whether the eyes of the bandaged person are open or shut, and in which direction she is looking. Supposing—I was not there, and I do not know, and Sir Oliver Lodge says nothing about it—but supposing the girls communicated by visible signals, it would be a distinct advantage for the percipient to hide the fact that she kept her eyes fixed on the agent. Such a code of signals might easily be arranged to be made by movements of the eyes or eyelids, or of the fingers, or even of the feet, in such a way as to elude the attention even of an observant person, if he was unsuspecting, and convinced of the genuineness of the performance and of the artlessness of the performers.

In any case, the ears were not plugged, and therefore collusion could have taken place by means of audible signals. Sir Oliver Lodge of course heard no signals, or he would have mentioned them; but as we have already found, we see what we look for, and equally we hear what we are listening for; and it is clear that the possibility of communication by audible signals never occurred to Sir Oliver Lodge, or he would have taken precautions against

it. As it was, he took no precaution whatever against it. The sounds would of course not be loud, but 'silence was maintained,' and the hum of the streets, which we are told was audible, would obscure a faint sharp sound to anyone who was not near and not listening for it. Such a method as Sir James Crichton Browne suggests, of clicking two coins together, or even, if the parties were near each other, clicking the thumbnail, or the tongue, would be quite effectual. There is no onus on me to prove how the communication was in fact effected. For the purpose of destroying Sir Oliver Lodge's edifice it is enough to show that it could have been effected. *Entia non sunt multiplicanda præter necessitatem.* Supernatural causes, even if they are called only supernormal, are not to be invoked until it has been shown that natural causes could not have produced the effect. I say unhesitatingly that this has not been shown. *Where were the agent's hands?*

We are told that the agent sometimes holds the percipient's hand. She might almost as well be allowed to hold up before the percipient's eyes the object to be drawn. She might quite as well be allowed to name the object audibly to the percipient. Anyone who knows the Morse code can communicate by its means as easily by hand pressures as by writing, or by taps, or by flashes. It is not only extremely simple and extremely easy, but it is widely known; it is almost universally known that this can be done. Everybody knows that it is in this way that messages are transmitted by the electric telegraph—everybody, that is to say, except one professor of electricity; but to him it never occurs. The possibility of it, the extreme probability of it, never presents itself to him. It is as strange to him as the occurrence of a miracle, nay, it is stranger, for he accepts at once a miraculous interpretation of the 'phenomena,' and obstinately shuts his senses when this natural and obvious interpretation is hitting him in the face and shouting at him to be recognized.

But sometimes the agent and percipient did not hold

hands. No, but we are told that they sat near together, 'with a distinct intervening distance,' words which clearly imply that the distance was not great. Could any 'condition' be more favourable for the use of a code by means of faint sounds or slight movements? And this was a 'condition' that Sir Oliver Lodge could have altered if he chose, but never troubled to alter. He was so convinced by the 'absolutely genuine and artless manner in which the impressions are described,' that he is 'perfectly convinced of the transparent honesty of purpose of all concerned.' What did he expect? Is it the custom for tricksters to behave so as to put their dupes on their guard? Did he watch to see whether Miss R. and Miss E. winked at one another? And as he did not detect them in winking did he conclude that they must be genuine? Is not every dupe of the confidence trick, or the gold brick swindle, or the Spanish prisoner swindle, perfectly convinced of the transparent honesty of purpose of all concerned? Did he expect that if they were not genuine they would come in masks and cloaks, and whisper together in corners? Apparently he did, and since they behaved in the genuine and artless manner in which ordinary conjurers always do behave, he was convinced that they could not be conjurers! Of what value is his assurance that he believes these performances were genuine?

It may be said that this hypothesis of collusion and communication by means of a code does not square with the successes attained when the agents were not the girls but were 'quite disconnected from the percipient in ordinary life, and sometimes complete strangers to them.' 'Dr. Shears had a successful experiment, acting alone, on his first and only visit.' This is quite inconclusive until we have full particulars. What is meant by acting alone? From the context it would appear that it means he was the only person acting as 'agent' in that particular experiment, and was not one of two or more 'agents.' We are not told that he was alone in the room with the perci-

pient, and if he was, Sir Oliver Lodge's testimony is of no value. If there were others in the room, was the second young lady one of them? Did she know what Dr. Shears was to think of? If so, the experiment is worthless from the possibility of collusion without any suspicion of Dr. Shears. It was Dr. Shears' first and only visit, and he had to think as hard as he could of some one thing. What was that thing? Was it in the room? If so Dr. Shears probably looked at it, if not continuously, at least more than once, and a sharp percipient might easily make a good guess from the direction of his eyes and his facial expression. It won't do. It may be good enough for a professor of electricity who is convinced that telepathic communication is proved; but it is no proof, it is very poor evidence indeed, to anyone who approaches the subject in a spirit of reasonable and moderate scepticism.

Similarly with the experiments performed with Mr. Birchall as agent. I do not suggest for a moment that Mr. Birchall was in collusion with the recipient, but I do want to know whether the young lady who was not the percipient was in the room during the experiments, and whether she knew what object Mr. Birchall was to think of. If both these 'conditions' were present, and if Sir Oliver Lodge did not vary them, these experiments are as worthless as the rest. Sir Oliver Lodge actually does not mention whether these 'conditions' were present or not. It is evident, therefore, that he considers them of no importance; yet the whole decision as to the genuineness of the imposture hangs upon this condition. What remnant, what rag of confidence can we have in Sir Oliver Lodge after this? Moses Primrose was an astute man of business compared with him.

In the light of this new certainty, that there was ample opportunity for the use of a code, and of what I must consider the probability that a code was used, let us examine another feature of these experiments, a feature that it says much for Sir Oliver Lodge's honesty that he has recorded, and little for his acumen that it did not at

least arouse his suspicion. He frequently drew things without any name, and he is 'bound to say that these irregular and unnamable productions have always been rather difficult, though they have at times been imitated fairly well.' How nearly is fairly well, allowance being made for strong prejudice? 'Moreover, in some very interesting cases the idea or name of the object was certainly the things transferred, and not the visual impression at all; this specially happened with one of the two percipients; and, therefore, probably in every case the fact of the object having a name would assist any faint impression of its appearance that might be received.' Perhaps it would; though when Sir Oliver Lodge says probably it would he is departing from that strict scientific attitude which 'takes nothing for truth without clear knowledge that it is such.' In this obscure region, of what Sir Oliver Lodge calls the supernormal, and which I prefer to call the miraculous, anything may happen. All that we know about it is that the laws that regulate events and the probability of events are totally different from those that we certainly know of. Therefore, although the fact of a thing having a name may perhaps favour the transmission of the idea of it by telepathy, it may, for aught we know, interfere with transmission by this means, or even prevent it altogether; but there is no question or doubt whatever that it would facilitate transmission by means of the Morse alphabet, or some other code. If, therefore, we find that in some cases the name of the object was certainly the thing transferred, may we not justly claim that this is corroborative evidence that a code was used? Is it not clear that, if the Morse alphabet, for instance, was used, it would be much easier and much shorter to transmit the name of a thing than the description of a thing whose name was unknown? And is it not probable that the reason nameless drawings were 'rather difficult' and at best were produced only fairly well, was that they were 'rather difficult' to describe by means of a code of signals? Bearing in mind that *Entia non*

sunt multiplicanda præter necessitatem, which alternative ought we to adopt?

Again, Sir Oliver Lodge was 'anxious to try both percipients at once,' but he 'has not met with much success under these conditions.' Has he met with any? If the ideas are transmitted by telepathy, there seems no reason why they should not be as easily transmitted to two people as to one; but if they are transmitted from one person to another by a code, it is clearly impossible that they can be transmitted if there are two percipients and no agent, that is to say, if the would-be agent is otherwise engaged.

It would be very tedious to examine at length all the separate experiments described by Sir Oliver Lodge, but anyone who chooses to peruse them will see that though the facts may fit the hypothesis of thought-transference or telepathy, they fit at least equally well the hypothesis of communication by means of a code; and if both hypotheses fit equally well, the latter ought to be chosen, on the principle *Entia non sunt multiplicanda præter necessitatem*. On one occasion, the object thought of by the agent was a diagram of the pattern of a Union Jack. 'As usual in drawing experiments, Miss R. remained silent for perhaps a minute; then she said, "Now I am ready." I hid the object; she took off the handkerchief and proceeded to draw on paper placed in front of her. She this time drew all the lines of the figure except the horizontal middle one. She was obviously much tempted to draw this, and, indeed, began it two or three times faintly, but ultimately said, "No, I'm not sure," and stopped.' Sir Oliver Lodge regards this as conclusive proof that the idea of the Union Jack was imperfectly transmitted. I, on the other hand, regard it rather as indicating that the heart (of the medium) is deceitful above all things, and desperately wicked. I can well imagine that the percipient underrated the gullibility of Sir Oliver Lodge, and was afraid to be too accurate lest he should smell a rat. A little hesitation, a little imperfection, lends such an air of veri-

similitude to an otherwise perfect performance. I think her uneasiness was not called for. Sir Oliver Lodge has not a suspicious temperament, and the more perfect the performance the better he would have been pleased, and the more certain he would have been of the telepathy. But in my opinion the lady was astute. The experiment was an early one, and the practice of mediums of all kinds is to be cautious at first, and not to launch out until they are thoroughly sure of their sitter. And why did Miss R. remain silent for perhaps a minute? Is there any reason to suppose that the telepathic process is so slow that it takes a minute to transfer the idea of so simple an object as the Union Jack? We do not know; but we do know that it takes time to click out the letters of the words 'Union Jack' by means of the Morse code; and that a minute would suffice for a practised operator. We are told nothing of the profession or business of Miss E. and Miss R. Were they by any chance telegraph operators? Of course their business seems at first blush totally irrelevant to the genuineness of the performances, but it may not be so; it may be highly important. At any rate, Sir Oliver Lodge does not mention it, and his omission to mention it is another indication that he is not very wide awake. It is the very first thing that a medical or other cautious person would ascertain.

'The next experience of any importance which I had with this kind of experiment at telepathy'—Sir Oliver Lodge's conviction that there is such a thing as telepathy, and that these experiences are manifestations of it, is quite unshakable—'took place during a visit to Carinthia in 1892.' He was staying in the house of Herr von Lyro, and found that the two daughters of the house—Out, hyperbolical fiend! how vexest thou this man? talkest thou nothing but of young ladies?—had supernatural powers:

'The operations were conducted in an ordinary simple manner. One of the sisters was placed behind a drawing

board, erected by me on a temporary sort of easel, while the other sat in front of the same board ; and the objects or drawings to be guessed were placed on a ledge in front of the board, in full view of the one and completely hidden from the other.

‘ Naturally I attended to the absence of mirrors and all such obvious physical complications. The percipient preferred to be blindfolded, but no precaution was taken with reference to this blindfolding, since we know that it is unsafe to put any trust in bandaging of eyes (*Journal*, i, 84). Agent and percipient were within reach of one another, and usually held each other’s hands across a small table. The kind and amount of contact was under control, and was sometimes broken altogether, as is subsequently related.

‘ The ladies were interested in the subject, and were perfectly willing to try any change of conditions that I suggested, and my hope was gradually to secure the phenomenon without contact of any kind, as I had done in the previous case reported ; but unfortunately in the present instance contact seemed essential to the transfer. Very slight contact was sufficient, for instance, through the backs of the knuckles ; but directly the hands were separated, even though but a quarter of an inch, the phenomena ceased—reappearing again directly contact was established. I tried whether I could bridge over the gap effectively with my own, or another lady’s hand ; but that did not do. I also once tried both sisters blindfolded, and holding each other by one hand, while two other persons completed the chain and tried to act as agents. After a time the sisters were asked to draw, simultaneously and independently, what they had “ seen ” ; but though the two drawings were close imitations of each other, they in this case bore no likeness to the object on which the agents had been gazing. My impression, therefore, is that there is some kind of close sympathetic connection between the sisters, so that an idea may, as it were, reverberate between their minds when their hands touch, but that they

are only faintly, if at all, susceptible to the influence of outside persons.

‘ Whether the importance of contact in this case depends upon the fact that it is the condition to which they have always been accustomed, or whether it is a really effective aid, I am not sure.

‘ So far as my own observation went, it was interesting and new to me to see how clearly the effect seemed to depend on contact, and how abruptly it ceased when contact was broken. While guessing through a pack of cards, for instance, rapidly and continuously, I sometimes allowed contact and sometimes stopped it ; and the guesses changed, from frequently correct to quite wild, directly the knuckles or finger tips, or any part of the skin of the two hands, ceased to touch. It was almost like breaking an electric circuit. At the same time, partial contact seemed less effective than a thorough hand-grasp.

‘ It is perfectly obvious how strongly this dependence on contact suggests the idea of a code ; and I have to admit at once that this flaw prevents this series of observations from having any value as a test case, or as establishing *de novo* the existence of the genuine power. My record only appeals to those who, on other grounds, have accepted the general possibility of thought-transference, and who, therefore, need not feel unduly strained when asked to credit my assertion that unfair practices were extremely unlikely ; and that, apart from this moral conviction, there was a sufficient amount of internal evidence derived from the facts themselves to satisfy me that no code was used. The internal evidence of which I am thinking was : (1) the occasionally successful reproduction of nameless drawings ; (2) the occasional failure to get any clue to an object or drawing with a perfectly simple and easily telegraphed name ; (3) the speed with which the guesses were often made.

‘ I wish, however, to say that none of the evidence which I can offer against a prearranged code in this case is scientifically and impersonally conclusive, nor could it be

accepted as of sufficient weight by a sceptic on the whole subject. It is only because, with full opportunity of forming a judgment, and in the light of my former experience, I am myself satisfied that what I observed was an instance of genuine sympathetic or syntonetic communication, and because such cases seem at the present time to be rather rare, that I make this brief report on the circumstances.'

Seeing that these 'experiments' are, in Sir Oliver Lodge's own showing, utterly worthless, it is a pity that for the sake of his own reputation he did not suppress them. Every telegraph clerk knows that it is as easy to talk with the fingers as with the tongue, and no one but a fanatic would suppose for a moment that communication was effected by supernatural means when he knew that all the conditions for natural communication were present. It is useless for Sir Oliver Lodge to try and bear us down by the weight of his authority, as he tries in the final sentence of the passage just quoted. Every successive case that he relates diminishes the weight of his authority. It cannot now weigh with anyone who is capable of exercising an independent judgment.

There is in his account of the performance of these young ladies a feature that demands a moment's attention. One of them, while holding the hand of the other, was able to name the number of pips on cards that were invisible to the speaker, but visible to the sister who held her hand. Out of sixteen attempts ten were successful. Really, the ladies must have been very clumsy if they could produce no better result than this, after years of practice. I have had no practice at all, but I would undertake to get fifteen out of sixteen right at the first attempt, and to name the suit also after five minutes' trial with a confederate. But note what follows: Sir Oliver Lodge enters into an elaborate mathematical calculation to show that this amazing result could not possibly be the result of chance guessing. He shows that the probabilities are 8008 to 13¹⁰ that it is not the result of chance. Less

than one chance in the million that it is! Wonderful! But who on earth supposes that it is the result of chance? One might as well suppose it the result of chance when a child is told to take a piece of cake and forthwith takes it. But observe the result on the mind of entering on this calculation. May I ask the reader to turn back to p. 32 and refresh his memory of what is there said of the effect of distracting the attention. The conjurer exerts all his art to divert our attention, by his gestures and what is technically known as his patter, from what he does not want us to see. The mathematical calculations are Sir Oliver Lodge's patter. By them he makes us attend to the enormous disparity of the chances, as if this disparity were the point at issue, and as if the matter in dispute were whether the display is due to chance or to design. The effect is that when he proves it could not be due to chance, he captivates our concurrence, and we are very apt to forget that this is not what needs to be proved. We agree with him on this point, and we are much disposed to assume that in all that he has been saying, and on not this point only, he has been right. Of course the result was not due to chance. It needs no mathematical calculation to prove that. What should be proved is that it could not have been due to collusion, and no mathematical calculation can prove this. The mathematics are a red herring—a red herring? They are 8008 red herrings, they are 13^{10} red herrings drawn across the scent.

I pass the remaining records in this section of Sir Oliver Lodge's book, for it would be tedious to examine them all, and as to many of them he admits that the evidence is not sufficient to satisfy a sceptic, though it is amply sufficient to satisfy him. He does not recognize in the least that in making these admissions he is abandoning all right to be considered a scientific man, while at the same time he is trading on his reputation as a scientific man. Although he never actually puts the matter in these words, what he says is virtually an exhortation to the reader to accept the opinions given, and to accept them on the ground that the

evidence is enough to satisfy an eminent scientific man, Principal of the University of Birmingham. It is true that there are flaws and gaps in the evidence, flaws and gaps so damning that he cannot for very shame ask you to accept it on its own merits, but you are to accept it because a great scientific man was on the spot, observed the phenomena, and gives his guarantee that everything was done in good faith by the performers. This is not the method of science. It is the negation of science. If Sir Oliver Lodge shows himself in his own narrative, tested by nothing but his own statements, to be as gullible as the yokel who is taken in by the confidence trick, what is his guarantee worth? Would any sane man give the smallest coin of the realm for it, or pay any attention to it at all? I pass from his records of what he considers to be facts to his explanations of them. This is how he puts it:

‘ I whisper a secret to A, and a short time afterwards I find that B is perfectly aware of it. It sometimes happens so. It has probably happened in what we are accustomed to consider a very commonplace fashion; A has told him. When you come to analyse the process, however, it is not really at all simple. I will not go into tedious details; but when you remember that what conveyed the thought was the impalpable compressions and dilatations of a gas, and that in the process of transmission it existed for a finite space of time in this intermediate and curiously mechanical condition, you may realize something of puzzlement in the process. I am not sure but that we ought to consider some direct sympathy between two minds, without this mechanical process, as really a more simple and direct mode of conveying an idea. Pass on to another illustration.

‘ Tell a secret to A, in New Zealand, and discover that B, in Petrograd, is before long aware of it, neither having travelled. How can that happen? That is not possible to a savage; it would seem to him mysterious. It is mysterious in reality. The idea existed for a time in the form of black scrawls on a bit of paper, which travelled

between the two places. A transfer of material occurred, not an aerial vibration; the piece of paper held in front of B's eyes excited in him the idea or knowledge of fact which you had communicated to A.'

This is either extremely disingenuous or extremely muddle-headed. It may impose upon the ignorant and unthinking, but it is as distant from scientific explanation as anything can be. It is true that the idea is *conveyed* in the first instance by the compressions and expansions of a gas; it is true that it is conveyed in the second instance by marks upon paper; it is true that it is conveyed in the third instance by the electric current; but to say that it *exists* 'for a finite space of time' in a mechanical condition; that it existed for a time in the form of black scrawls on a bit of paper; is the grossest materialism. Sir Oliver Lodge might as well say that when he travels by omnibus he exists for a finite space of time in the form of an omnibus. In each of these cases there is an impression on the senses. In each case there is communication by means of a code. In each case the code has to be initiated by physical movements of the agent, and interpreted by the receiver from the impressions on his sense caused by these physical movements. How is it possible to argue from these cases, in which a code is used and must be used, that these are cases in which no code need be used? So to argue speaks disingenuousness or muddle-headedness so extreme as to merit in either case a stronger title. We might equally well argue that since men can and do live and thrive on various kinds of food, therefore they can live and thrive without any food at all. Can thought or ideas be transmitted? Experiment answers that they can. Can men live without food? Experiment answers that they can. And in both cases it is found, when the experiments are conducted under rigorous conditions, that the thought or the food was conveyed surreptitiously. The one 'fact' is as probable *a priori* as the other. The *a posteriori* evidence for the one is as cogent as the

a posteriori evidence for the other. He who believes the one must logically believe the other, and the test of belief is conduct. If Sir Oliver Lodge believes that he can live for six months without food, let him try ; and if he survives I also will believe it. If he believes that he can convey without a code the number of a bank-note, let him try, and if he succeeds, I also will believe in thought-transference, and will make him a present of the bank-note into the bargain.

CHAPTER V

MRS. PIPER

WE now come to the case of the celebrated Mrs. Piper. In examining the records of her performances we must keep constantly before us the attitude of Sir Oliver Lodge's mind towards performances of the class, and his complete blindness to the possibility of their being explainable by ordinary means. We must remember with what care he excluded, in the experiments with Miss E. and Miss R., one very obvious means of communication, and how gravel blind he was to the possibility of communication in another very obvious way. As a witness on these matters his evidence is tainted, tainted not by wilful dishonesty, but by deeply ingrained prejudice. Take the opening passage of his account of Mrs. Piper :

' Mrs. Piper in the trance state is undoubtedly (I use the word in the strongest sense ; I have absolutely no more doubt on the subject than I have of my friends' ordinary knowledge of me and other men)—Mrs. Piper's trance personality is undoubtedly aware of much to which she has no kind of ordinarily recognized clue, and of which in her ordinary state she knows nothing.'

Let us pause here to note that Sir Oliver Lodge uses the word ' undoubtedly ' in a very unusual sense. Fortunately he defines the sense in which he uses it, or we might have been seriously misled. When he says Mrs. Piper's trance state is undoubtedly so-and-so he means that he does not doubt it is so-and-so. This is not the ordinary meaning of the word. When we say a thing is undoubtedly so, we mean, not that we do not doubt it ourselves, but that no

one can doubt it. We mean that it is so. Fortunately, on this occasion Sir Oliver Lodge defines the sense in which he uses the word, but he does not always define the sense in which he uses words, and therefore we are left with an uneasy feeling that on other occasions when he says a thing is so, or was so, he means only that he did not doubt that it is so or was so; and we have already found that Sir Oliver Lodge's capacity of suppressing doubt is very unusual. He has a capacity for simple and unquestioning faith that Tertullian would envy. Tertullian believed things because they were impossible. Sir Oliver Lodge believes them for the same reason, only more so.

What ground has Sir Oliver Lodge for the assertion that I have quoted above? The only person who knows the extent of Mrs. Piper's knowledge in her ordinary state is Mrs. Piper herself, and even she cannot at any one time be aware of the whole extent of her knowledge. Sir Oliver Lodge depends entirely on what Mrs. Piper says, yet he makes the assertion, not as if it were derived from hearsay, but as if it were a matter that he had himself observed. He gives his own personal guarantee for a thing about which he knows nothing beyond what he has been told. Is this scientific? Or is it trading on the authority of a 'scientific' man? I cast no reflections on Mrs. Piper, but it is only ordinary prudence to assume that a witness of whom we know nothing except that she gave certain testimony may not be speaking the truth, or may not know that of which she testifies. In this case we may be certain that Mrs. Piper does not know that of which she testifies. No one is at any moment aware of the whole extent of his or her knowledge. It is impossible. Things are often temporarily forgotten, and even to all appearance completely obliterated from our minds for long periods, and yet a time comes when they reappear and startle us by their reappearance. It often happens that by no effort can we recall the memory of a certain thing, and yet at some subsequent time it startles us by presenting itself uncalled for. Mrs. Piper cannot possibly tell how much

she knows. Of what value, then, is Sir Oliver Lodge's assurance that she does not know this or that? As I sit writing this, scenes that I witnessed in childhood come boiling up in my mind, present themselves for a moment, and then subside again into the depths. Until a few minutes ago I had not the least suspicion that I knew these things; but I did know them. They were down in the depths of my mind; covered deep by the deposit of subsequent experiences; and now, by the operation of some cause that I cannot trace, they rise to the surface again. What queer accumulations of knowledge there may be in the depths of our minds we never know, any more than we know the contents of a lumber room into which the debris of a house has been dumped for the duration of a lifetime. Recall is one thing: revival is another. Daily experience shows that there are many memories that we cannot recall when we want to, but whether we ever forget anything in the sense that it cannot be revived by some appropriate stimulus has often been debated, and has never been satisfactorily settled either way.

There are many cases on record that make it appear as though we never do forget anything beyond the possibility of revival. Some of these have occurred in my own experience, and others are well authenticated. It is unnecessary to settle the point here, even if space permitted. All that is necessary is to remind the reader that there is good evidence that even trifling occurrences that we paid no attention to at the time they occurred, and of which we could affirm with the utmost confidence that we have no knowledge at all, yet have left a trace, and may in exceptional circumstances be revived. The case that will at once occur to the reader is that related by the poet Coleridge, which I may repeat here, not as thoroughly authenticated, but as illustrating the kind of thing I mean. It is alleged that an illiterate maid-servant, while delirious in fever, spoke volubly and at great length in language which no one about her could understand. A learned man was brought to see her, and discovered that she was

reciting long passages in Greek and Hebrew. Inquiries showed that she had once been in the service of a learned pastor, who was accustomed to walk up and down his little garden reading aloud and reciting passages of Greek and Hebrew in the hearing of his servant, who was engaged in her duties with the kitchen window open. Whether the story is true or not does not matter for the purpose in hand, which is merely to illustrate my meaning. Occurrences of the same kind, though less dramatic and striking, are well authenticated, and have occurred in my own experience as a physician, and in cases under my care.

Now, the importance of these occurrences is this, that the occasions on which such revivals of apparently forgotten knowledge take place, are when the mind is in an abnormal state. In my own cases they have occurred in delirium, and when the mind has become enfeebled from long and exhausting illness; but the condition under which they are prone to occur is that of hypnotism; and the accounts that are given by Sir Oliver Lodge of Mrs. Piper's 'trances' show beyond question that, if they are genuine, in them she is auto-hypnotized. She has hypnotized herself, and is in the hypnotic sleep or state. Of this there can be no reasonable doubt. Nor need we have any doubt that if she is in this hypnotic state, Mrs. Piper becomes conscious of memories of which in her normal state she is unconscious. Such revivals are common-places in hypnotism; but it is a very long step from this to the supposition that she has never known these things of which she now becomes conscious. In the ordinary sense of knowing, that is of attending to the things so that she could recall them, she may never have known anything about them; but it does not in the least follow that she did not witness them, that they did not make an impression on her senses, and through her senses on her brain, so creating a stored memory that, though it could never be recalled, could yet be revived.

It would take too long to go through in detail the very lengthy experiences that Sir Oliver Lodge has had with

Mrs. Piper, and I must summarize under a few headings what I have to say about them.

1. Mrs. Piper is attended by a familiar spirit. At first the spirit called himself Dr. Phinuit, and spoke in a certain manner, which we are assured was characteristic of his personality. Subsequently he gave his name to Mrs. Piper as Rector, and spoke in a different manner, which Sir Oliver Lodge is convinced betokens a different personality. Whether there is one or two familiar spirits does not much matter for the present purpose. The important thing is that she has a familiar spirit, which gives her information, makes requests, issues warnings, directs her to do things, or to tell others to do things, and so forth. Now this is not a novelty. It is quite familiar to those who have studied the vagaries of the human mind. It has happened again and again. Of course it is open to Sir Oliver Lodge to claim these previous cases as corroborative evidence of the genuineness of Mrs. Piper's familiar spirits. If she has experiences very similar to the experiences of other women who lived three hundred years before her, and of whose experiences she 'could not possibly have known,' though they are recorded in books accessible to everyone, is this not strong *primâ facie* evidence that these strange events really did happen? Well, perhaps it may be, but if Sir Oliver Lodge claims that it is, he is letting himself in for more than he bargains for, for more than perhaps even he is prepared to swallow.

On November 8th, 1576, a woman named Elizabeth Dunlop, or Jak, the wife of Andro Jak of Dalry, in Ayrshire, was accused of sorcery and witchcraft, and was enjoined to confess by what art she could discover the places in which lost goods could be found, and not only tell the nature of illnesses but also foretell the result of them. (In this she was superior to Mrs. Piper, who can diagnose diseases, but does not appear able to predict their termination.) In answer, she confessed that of herself she had no knowledge of such matters, but that when questions were asked at her concerning them she was in the habit of

applying to one Thome Reid, who died at the battle of Pinkie twenty-nine years before, and who resolved her any questions she asked him. This familiar spirit of hers was much more circumstantial than Dr. Phinuit or Rector, who are known only by speaking in Mrs. Piper's voice or writing with her hand. Thome Reid actually appeared visibly to Mrs. Jak or Dunlop, and she was able to describe him minutely, as a respectable elderly-looking man, grey-bearded, and wearing a grey coat with Lombard sleeves of the auld fashion; a pair of grey breeches and white stockings gartered above the knee, a black bonnet on his head, close behind and plain before, with silken laces drawn through the lips thereof, and a white wand in his hand. It is clear, therefore, that Thome Reid had much greater power of precipitating himself—I do not know whether I am using the correct technical term—than Dr. Phinuit or Rector, neither of whom was ever seen by Mrs. Piper. Thome Reid assured Mrs. Dunlop that he had been commanded to attend upon her by the Queen of the Fairies, whom Mrs. Dunlop had once accommodated with a seat to rest upon and a drink of small beer, the Fairy Queen having paid her a visit in the guise of a stout woman. Thome Reid was of much service to Mrs. Dunlop in giving her information as to things of which, but for him, she was 'wholly ignorant,' but he was constantly importuning her to accompany him to Fairy-land. Whether she eventually complied with his request after she had 'passed over' I do not know, but it is certain that his haunting her was the cause of her being tried as a witch, convicted, and burnt.

Now, it is plain that when Bessie Dunlop gave this account of the haunting by Thome Reid she had before her the prospect of this horrible fate. Nevertheless, so strong was the spirit of truth in her, so deep her conscientiousness, that in spite of what was in store for her she confessed to what she believed to be true. I have no more doubt that she was an honest witness of the truth as far as she knew it than Sir Oliver Lodge has of the truth of Mrs. Piper.

Like Mrs. Piper, too, Bessie Dunlop's account was corroborated. Mrs. Piper has given evidence of much knowledge of things of which she was 'wholly ignorant,' such as the diagnosis of disease, but none of her familiars has, I believe, ventured to predict the future. Thome Reid did, and his predictions came true. This seems to me as crucial as any evidence adduced in favour of Phinuit and Rector; and if we are to believe in them I do not see how it is possible to withhold our belief from Thome Reid. Mrs. Dunlop no more knew Thome Reid in the flesh than Mrs. Piper knew Dr. Phinuit, but Thome Reid gave very much better evidence of his former existence than Dr. Phinuit has ever done, for he sent Mrs. Dunlop on errands to his son, and to others of his relatives and acquaintances, reminding them of certain transactions between him and them while he was alive; errands which Mrs. Dunlop duly executed. If this is not conclusive, what evidence given by Dr. Phinuit can compare with it? But belief in Thome Reid commits us to belief in the Fairies, and in the Fairy Queen as a stout woman drinking small beer. Is Sir Oliver Lodge prepared to go as far as this? And if not, why not?

Nor is Bessie Dunlop's by any means an isolated case. Alison Pearson had a familiar spirit named William Sympson, who also lived with the Fairies, and taught her certain medical secrets, so that she had for a patient an Archbishop, who must surely be as good a judge of familiar spirits as the Principal of a University. However, in spite of the Archbishop, she was *Convicta et Combusta*. There are also the spirits discovered by Matthew Hopkins, viz., Holt, Ilemauzar, Jarmara, Pyewhacket, Peck-in-the-Crown, Grizell Greedigut, and the others.

2. Now, I put the question in all seriousness to Sir Oliver Lodge, and I beg him to give it his best attention. Have we not very good ground to suppose that Mrs. Piper is a witch? If Bessie Dunlop was a witch, so proved by the possession of a familiar spirit, and if Alison Pearson was a witch, so proved on the same ground, must we not suppose that Mrs. Piper also is a witch? Sir Oliver Lodge

will probably reply that Mrs. Piper cannot be a witch because there are no witches and there is no such thing as witchcraft: it is nothing but vulgar imposture. If he says there are no witches, I shall maintain that there are no mediums, and I shall be glad to know how he can refute me by any evidence that will not tell with equal force in favour of witches. If he says that there is no such thing as witchcraft, and that it is only an exploded superstition, I ask whether he has ever examined the evidence? If he has not, his opinion is of no value. I beg to remind him of his own words:

‘Puzzling and weird occurrences have been vouched for among all nations and in every age. It is possible to relegate a good many asserted occurrences to the domain of superstition, but it is not possible thus to eliminate all. Nor is it likely that in the present stage of natural knowledge we are acquainted with all the workings of the human spirit and have reduced them to such simplicity that everything capable of happening in the mental and psychical region is of a nature readily and familiarly to be understood by all. Yet there are many who seem practically to believe in this improbability; for although they are constrained from time to time to accept novel and surprising discoveries in biology, in chemistry, and in physical science generally, they seem tacitly to assume that these are the only parts of the universe in which fundamental discovery is possible, all the rest being too well known.

‘It is a simple faith, and does credit to the capacity for belief of those who hold it—belief unfounded upon knowledge, and tenable only in the teeth of a great mass of evidence to the contrary.

‘It is not easy to unsettle minds thus fortified against the intrusion of unwelcome facts; and their strong faith is probably a salutary safeguard against that unbalanced and comparatively dangerous condition called “open-mindedness,” which is ready to learn and investi-

gate anything not manifestly self-contradictory and absurd. Without people of the solid, assured, self-satisfied order, the practical work of the world would not so efficiently be done.'

I will remind him also of the words that he quotes from the early Presidential Addresses of Professor Henry Sidgwick, which are as apposite to my studies as to those of Sir Oliver Lodge :

'It is a scandal that a dispute as to the reality of these phenomena should still be going on, that so many competent witnesses should have declared their belief in them, that so many others should be profoundly interested in having the question determined, and yet that the educated world, as a body, should still be simply in the attitude of incredulity with respect to' witchcraft.

To return to Sir Oliver Lodge :

'But the question is reiterated. Why investigate that of which we are sure? Why conduct experiments in hypnotism or in telepathy? [or in witchcraft?] Why seek to confirm that of which we already have conviction? . . . There is a quite definite answer to this question—an answer at which I have already hinted—which I wish to commend to the consideration of those who feel this difficulty or ask this sort of question.

'The business of Science is not belief but investigation. Belief is both the prelude to and the outcome of knowledge. If a fact or a theory has had a *primâ facie* case made out for it, subsequent investigation is necessary to examine and extend it.

'Effective knowledge concerning anything can only be the result of long-continued investigation; belief in the possibility of a fact is only the very first step. Until there is some sort of tentative belief in the reasonable possibility of a fact there is no investigation—the scientific Priest and Levite have other business, and pass by on the other side.'

Has Sir Oliver Lodge ever studied witchcraft with assiduity and care? I can find in his books no indication that he has, and I am certain that if he had, he would have expressed less confidently his opinion that the phenomena he describes must be due to telepathy or to the agency of ghosts. He will, I am sure, agree with me when I say it is a cardinal principle of scientific investigation that no hypothesis may be admitted as established until every alternative hypothesis has been excluded. If the facts can be accounted for equally well by one hypothesis as by another, we are forbidden by the principles of science to adopt one of them rather than the other. Sir Oliver Lodge never mentions witchcraft. Manifestly, he has never taken it into consideration. It has never occurred to him that his phenomena and experiments and results could be thus explained. Now I have studied witchcraft. References to it will be found in my writings for years past. I have studied it long and carefully, and I pledge my scientific reputation, which I think I may say is as high in my own department as that of Sir Oliver Lodge in his, that there is as much evidence in favour of witchcraft as there is in favour of telepathy. I go further, and affirm that the evidence in favour of witchcraft is overwhelmingly greater than the evidence in favour of telepathy. If Sir Oliver Lodge has studied witchcraft, how does he contrive to shut his eyes to its identity with spiritualism and telepathy? If he has not studied witchcraft, he is himself that scientific Priest and Levite to whom he refers so scornfully, and has passed by on the other side. 'Out of thine own mouth, thou wicked servant, shalt thou be judged.'

The cross-correspondences that are alleged to prove the existence of the ghosts of dead people and their endeavours to communicate through mediums with the living, are so few, so doubtful, so ambiguous, and need so much amplification by the imaginative ingenuity of the believer, as to make very little impression upon anyone who is not ready and determined to believe in spite of his own

reason. They consist of very obscure allusions, or very obscure utterances that may perhaps be allusions, to the same thing, uttered by different mediums, and attributed either by the mediums or by Sir Oliver Lodge to the same 'control,' a control being the ghost or spook of a dead person. There are very few of these so-called cross-correspondences on record; they are extremely obscure, and need a great deal of torturing and interpretation and glossing before they can be twisted into any appearance of referring to the same thing or of emanating from the same source. Here are two of them:

'Mrs. Forbes's script, purporting to come from her son Talbot, stated that he must now leave her, since he was looking for a sensitive who wrote automatically [a "sensitive" seems to be the same thing as a medium] in order that he might obtain [? furnish] corroboration of her own writing. Mrs. Verrall, on the same day, wrote of a fir-tree planted in a garden, and the script was signed with a sword and suspended bugle. The latter was part of the badge of the regiment to which Talbot Forbes had belonged, and Mrs. Forbes had in her garden some fir-trees, grown from seed sent to her by her son. These facts were unknown to Mrs. Verrall.' Wonderful, is it not? These spooks have their own methods, which it is impious to question, or we might ask why the ghost of Talbot Forbes did not say straight out to his mother, 'I am now going to Mrs. Verrall to tell her of those fir-trees of yours, and will sign the script with my own name.' If he had done this, and if collusion between Mrs. Forbes and Mrs. Verrall could be excluded, there would have been some evidence worth investigation. As it is, there is none. Again: 'On December 18th, attempts were made in Mrs. Forbes's script to give a certain test word, "Dion" or "Dy," which, it was stated, "will be found in Myers' own . . ."' Mrs. Verrall interpreted the test word at the time, for reasons given, as "Diotima," and a description of the same part of the Symposium, including the mention of Diotima, did occur in *Human Personality*, which was

published about three months later.' This is quite as convincing as the bricks in Smith the weaver's chimney, which 'are alive at this day to testify it; therefore deny it not.'

It seems that by a cross-correspondence is meant the concurrent testimony of two independent witnesses. Here we have Mrs. Forbes and Mrs. Verrall testifying to two things which by a good deal of twisting and forcing and interpretation may be tortured into having a bearing on the same subject, but which certainly do not carry conviction to a mind that is not determined to be convinced 'in erring reason's spite.' In comparison with the concurrent testimony of independent witnesses in favour of witchcraft, it is contemptible. Out of many hundreds of examples I choose the first that comes.

In the year 1591, four persons, Sellie Duncan, Dr. Fian or Cunningham, Agnes Sampson, and Euphemia Macalzean, all severally confessed to the following crimes. Barbara Napier, Gray Meill, and some two dozen other persons were convicted at the same time of the same offences, but whether they also confessed is not clear. On All Hallowmass Eve they assembled with others to the number of upwards of two hundred, and each embarking in a sieve, they sailed over the ocean 'very substantially,' until they met the devil, bearing in his claws a cat that had been drawn nine times through fire. This he delivered to one of the witches, with directions to cast it into the sea and cry 'Hola!' On this being done, a furious tempest arose, the purpose of which was to shipwreck and drown James VI of Scotland, who was then returning from Copenhagen with his young bride. The witches sailed in their sieves through the tempest they had raised, landed on the coast of Scotland, and, being Scots, naturally proceeded to the nearest church to hold a preaching. After the service, they feasted upon a corpse, which they dug up from the churchyard for the purpose, drank plenty of excellent wine, which teetotallers will please note the devil provided, and danced with him in the churchyard until the cock crew. Upon these confessions, the whole thirty,

with the exception of Euphemia Macalzean, were first strangled and then burned. Euphemia, who was accused by many of her accomplices of having consulted them concerning the date of the King's death, was burned alive on June 25th, 1591.

It is to be noted that the witches who made these confessions well knew what was in store for them in consequence of their confessions. The worst that a medium has in prospect is a paltry fine, and if she is careful not to make predictions about the future, and in this respect Mrs. Piper was very careful, she is not only in no danger of punishment, but she is honoured and applauded. She is the centre of interest and attention. She is in most cases the recipient of pecuniary reward. She may make as much as £50 a month, whether she obtains sitters or not. Whatever reason we may have, therefore, to believe in the genuineness of the utterances of the medium, we have immeasurably more reason to believe in the genuineness of the confessions of the witches. I put these questions to Sir Oliver Lodge, and if he does not answer them, I shall take it, and I think most people will take it, that he cannot answer them satisfactorily.

First : Does he believe in witchcraft, and in the confessions, all to much the same purpose, all cross-correspondences, made by innumerable witches in different centuries and in different countries ?

Second : If he does not, on what ground does he believe in the utterances of mediums ? In what respect is the testimony of a medium more credible and more entitled to credence than that of a witch ?

Third : What distinction, if any, can be drawn between Dr. Phinuit, Rector, Imperator, Doctor, and the rest of Mrs. Piper's familiars, testified to by Mrs. Piper and Sir Oliver Lodge, and Thome Reid, William Sympson, Pye-whacket, Peck-in-the-Crown, Sack-and-Sugar, Vinegar Tom, Grizell Greedigut, and the rest of the witches' familiars, testified to by the witches and Matthew Hopkins ?

I beg to assure Sir Oliver Lodge that to say that I am

unfair, or that I am shutting my eyes to phenomena that are occurring in our midst, or that I am expending my energies in a crusade against the truth, or that he wishes I were better informed, will not serve. These are the answers that he gave to Dr. Tuckett, and if he gives me any answer at all, which I do not expect, it will probably be of the same character ; but such answers will not serve. They will serve to show the weakness of his position, and they will serve to show that he is conscious of the weakness of his position ; but they will not serve to rebut the charges I make against him, that he is much more credulous than the believers in witchcraft, and that he cannot logically believe in spiritualism, which he calls telepathy, unless he believes in witchcraft also. Come, Sir Oliver, it is easy to believe in spiritualism when you call it telepathy. Call witchcraft by another name—telepathy if you like, or telergy—and you will soon be able to believe in witchcraft also. In fact, you do now believe in what is virtually the same thing. You do now believe in it under another name.

3. Mrs. Piper had at first a familiar spirit, whom she calls, or who called himself, Dr. Phinuit. Subsequently she had others, and these familiar spirits spoke with her mouth, wrote with her hand, and so revealed to her and to Sir Oliver Lodge things that neither of them knew, or at any rate things that Mrs. Piper did not know, things of which in her ordinary state she knew nothing, things of which she was wholly ignorant. If we ask what evidence there is that she did not know these things, we are told that she could not have known them. They were outside her ken ; they concerned persons whom she had never met or heard of, and events and things that she could have had no opportunity of knowing. Very well. But what opportunity had Dr. Phinuit of knowing these things ? We have no evidence except Mrs. Piper's assertion that Dr. Phinuit ever existed even in the spirit ; and we have no evidence at all that he ever existed in the flesh. How, then, did he know ? It is of no avail to say that he must

have had opportunities, and must have known, for that otherwise he could not have revealed them, because precisely the same reasoning applies to Mrs. Piper; and after all, it was her voice that spoke, and her hand that wrote. If Dr. Phinuit knew all these minute details with respect to Sir Oliver Lodge's relatives and belongings; if he can tell Sir Oliver Lodge 'how many children or brothers or sisters he has, and their names; the names of father and mother and grandmother, of cousins and of aunts'; if he can tell how Lady Lodge became possessed of a ring; who gave Sir Oliver Lodge's sister her watch; and that the chain 'did not belong' (? was otherwise acquired); to whom fruit knives and corkscrews and other things in the Lodge family belonged; if he is able to tell all this, then either he must have paid very particular attention to the Lodge family, or he must be omniscient. He is not omniscient, for there are gaps in his knowledge. Consequently he must have studied the Lodge family with very peculiar care. Now, it is significant that though we do not know what opportunities Dr. Phinuit had of studying the Lodge family, we do know something of the opportunities that Mrs. Piper had of studying it. Mrs. Piper seems to have been a frequent visitor of the Lodges. She stayed in their house, on one visit for nine days, and on another for five days, at a time; and *neither Mrs. Piper nor Sir Oliver Lodge has ever been cross-examined* with respect to these visits. What the practice may be among professors of electricity and Principals of Universities, I do not know, but I know that among judges and lawyers, and in courts of law, in which the business of extracting the truth from testimony has been carried to the highest pitch, the practice is to attach no importance to testimony until it has stood the ordeal of cross-examination. This test has never been applied with respect to these matters either to Mrs. Piper or to Sir Oliver Lodge, and therefore in the opinion of anyone competent to estimate evidence their testimony is open to the gravest suspicion, not necessarily as to its honesty, but certainly

as to its accuracy. Let me put a few questions to them in cross-examination.

It is a common practice, is it not, Sir Oliver, in middle-class families such as yours and mine, to keep a relic of former days in the shape of a photograph album, containing a complete photographic record of all the near relatives of the owner, taken at various stages of their lives? Have you such an album? Would it be accessible to a visitor staying in the house? Are the names of the relatives written beneath the photographs?

Have you a family Bible, with the names of your family duly entered on the front page? and is it accessible to a visitor? Have you any other record of your progenitors, in the shape of family pictures, portraits painted from life, or photographic groups, engraved mementoes, silhouettes, miniatures, and so forth? If not, you are very exceptional in that respect, are you not?

Supposing a person to have the power, which some persons possess, of reviving, when in the hypnotic state, memories that they cannot in the waking state recall, of trivial events and impressions to which they did not attend, and of which they took no notice at the time of occurrence, do you not think it possible that the knowledge that is uttered with Mrs. Piper's voice, and is ascribed by her to Dr. Phinuit, may after all be her own knowledge, and that Dr. Phinuit is nothing but a figment of her imagination?

Dr. Phinuit has a keen scent for trinkets. He recognized a ring which Lady Lodge wears as having been given to Sir Oliver Lodge for her by a specified aunt just before her death. Sir Oliver Lodge takes it for granted that the ring was recognized, etc., by Dr. Phinuit. I do not take it for granted. Before I accept it, I must cross-examine my witnesses; and I will take this with another feat of Dr. Phinuit's: his calling for a locket that Lady Lodge sometimes wears, but had not then on, which had belonged to her father forty years ago. It is not quite clear whether Dr. Phinuit described it as having been thus given to

Lady Lodge, but let us suppose he did. Must the knowledge be supernatural, and must it necessarily be his? Is Mrs. Piper really out of it altogether? Before I accept an affirmative answer I must ask the witnesses to attend to the following cross-examination :

Mrs. Piper stayed in the house for a fortnight, did she not, and therefore was on pretty intimate terms with the family? Lady Lodge sometimes wears the locket, and therefore Mrs. Piper might herself have seen it. There was nothing odd therefore in her knowing that Lady Lodge possessed it. What we are called upon to admire is, I suppose, that Dr. Phinuit should know it had belonged to Lady Lodge's father forty years ago. Now when ladies stay in the same house and are on pretty intimate terms, they sometimes visit one another in their respective bedrooms, do they not? That is quite a frequent practice? Yes? And when they pay these visits, and are on familiar terms, it is not unusual for the visitee to show the visitor her treasures, is it? Come, Sir Oliver, you are an elderly married man, you must know pretty well the ways and customs of lady visitors; at any rate, you, Mrs. Piper, know them. Is it not as I suggest? Then, it is usual for the visitor to admire her hostess's possessions, and to go into little raptures over them, and call them 'sweet,' and 'too sweet for anything,' is it not? Yes? And upon this encouragement the hostess may relate how the trinket that is so sweet, or that is too sweet for anything, came into her possession, or what its history is, may she not? Nothing very supernatural about this, eh? Are you sure, Sir Oliver, that Mrs. Piper may not have gained a knowledge of the trinkets in some such way as this? I will not put you on your oath, but as a man of honour, can you put your hand on your heart and declare that it is impossible? If you can, I accept your assurance freely and completely, and I abandon that hypothesis altogether, and suggest another. You have daughters, I believe, or a daughter; and you sometimes give dinners, excellent and enjoyable dinners, at which your daughter is present.

Yes? Well, here I will ask the court to allow me to interrupt your cross-examination, and to put Lady Lodge into the box for a moment. Now, Lady Lodge, all girls like trinkets, and I dare say yours are not different from other girls in this respect. Has it never happened that when you were dressing for dinner, perhaps for some special occasion, when your daughter would be specially desirous to look her best, she has come into your room, or perhaps before you went up to dress has said in the drawing-room, 'Oh, may I wear your locket this evening? I mean the one that belonged to grandfather forty years ago'; or, 'Will you lend me a ring? the one Aunt Jane gave you just before she died?' You are certain she has never done so? Well, then, can you be sure that she, or you, or some other member of the family has not mentioned these matters to Mrs. Piper, perhaps at the dinner table, perhaps out of your hearing altogether? All sorts of subjects crop up in conversation when a guest is staying in the house. The talk might have turned on rings or lockets, and one of your children may have casually mentioned 'Mother has a ring' or a locket 'that belonged to so-and-so,' and thus the whole story may have become known to Mrs. Piper, who may have communicated it by telepathy or otherwise to Dr. Phinuit. Is this not possible, Lady Lodge? Thank you; and now, Sir Oliver, will you kindly point out where the necessity is for the performance of a miracle? For let there be no mistake, no misunderstanding. What you assert is the occurrence of the miraculous. You may call Dr. Phinuit a 'discarnate intelligence' and his knowledge supernormal, but I submit to you that a discarnate intelligence is another name for a ghost or a spook; and supernormal is another name for supernatural or miraculous. Can you deny it? Do you deny it? If so please point out the difference between a discarnate intelligence and a spook, between what is merely supernormal and what is supernatural and miraculous. I suggest that you avoid the old and well-known and well-established words because they are discredited, and you as 'a scientific' man

are ashamed to use them ; and I suggest that you use the terms discarnate intelligence and supernormal to soften down the shock that your readers would receive from the use of ghost or spook, or supernatural or miraculous, and to make them suppose that what you ask them to believe is something less than a ghost, and something less than a miracle. I ask you, Sir Oliver Lodge, as a scientific man, whether it is possible to alter the nature of a thing by altering its name ? How do you say ? Aye or No ? If you mean a ghost, why do you not call it a ghost ? If you mean supernatural and a miracle, why do you not say supernatural and a miracle ? If it is because you are ashamed to use the familiar words, why are you ashamed to use them ? If that is not the reason, what is the reason ? No, Sir, it is of no avail to answer me as you answered Dr. Tuckett. It will not serve you to call me unfair, to say I shut my mind to phenomena that are occurring in our midst, that I am expending my energies in a crusade against the truth, that you wish I was better informed, and so on and so forth ; you will be pleased to answer my questions or to admit that you cannot answer them. You are silent ? You may go down, Sir.

Manifestly it would be impossible to go through the whole of Sir Oliver Lodge's experiences with Mrs. Piper. They are very voluminous, and they are all much of the same character. All are about equally impressive on the face of them, and if we take them at their face value. *As to not one of them has either Sir Oliver Lodge or Mrs. Piper been cross-examined.* Until they have been cross-examined, their evidence is of no value at all. I have shown the lines on which cross-examination might begin in one or two cases, but I have by no means pushed the cross-examination, or conducted it exhaustively. There is plenty more in reserve ; but even as it stands, it is destructive. I venture to say that no one who is not a bigoted fanatic can retain his belief in the interpretation placed by Sir Oliver Lodge on his observations in the cases I have touched upon, even allowing that his observations were in

all respects accurate and trustworthy. It is not because they were easy to pick to pieces that I selected these particular cases: it is because special stress is laid upon them by Sir Oliver Lodge himself. They are test cases. If they fall, the whole edifice falls; just as if the results obtained by Miss E. and Miss R. fall the whole edifice falls. If I do not examine more cases, it is because first, to do so would extend this book to unwarrantable length, and make it as tedious as the book *Raymond* itself; and second, it would be waste of time. Anyone who is not convinced by what I have said is determined not to be convinced, and no evidence, no cross-examination, would convince him. He has Moses and the Prophets: neither would he believe though one rose from the dead.

I have said that no one but a bigoted fanatic can retain his belief in Sir Oliver Lodge's interpretations after a strict cross-examination of the witnesses. I wish to speak with moderation, but there are passages in Sir Oliver Lodge's writings that could scarcely be written by a person to whom these harsh words do not apply. I give the following instances. Mrs. Piper is in a trance, and one of her familiar spirits is using her hand to write with. This is what we are told. (I italicize the words to which I draw attention.)

'The right hand alone is active, being engaged nearly all the time in writing, *with intervals of what look like listening.*' How does a hand look when it is listening? How does this square with Sir Oliver Lodge's exhortation that 'too much care cannot be expended in getting the record exact . . . there is a dangerous tendency to try to coax the facts to fit some half-fledged preconceived theory.' So it appears.

'The dramatic activity of the hand is very remarkable: *it is full of intelligence*, and can be described as more like an intelligent person than a hand. It *turns itself* to the sitter when *it wants to be spoken to* by him; but for the most part, when not writing, *it turns itself away* from the sitter, *as if receiving communications from outside*, which

it then proceeds to write down; going back to space—*i.e.*, *directing itself* to a part of the room where nobody is—*for further information and supplementary intelligence* as necessity arises.’

‘The hand is tremendously pleased and excited and thumps and gesticulates. The impression given is like that of a person dancing round the room in delight at having accomplished something.’

But it is not only a hand that can have an independent personality of its own, and show itself full of volition and intelligence. The same mental characters may be exhibited by a table! In *Raymond*, at p. 220, we are told:

‘The table rocked to and fro *with a pleased motion*.’ (The italics throughout are mine.) ‘The table now *seemed to wish* to get into Lady Lodge’s lap, and *made most caressing movements* to and fro, as if it could not get close enough to her’ (p. 221).

‘It found a corner of the skirting board, where it could lodge one foot about six inches from the ground. It then raised the other three level with it in the air; and this it did many times, *seeming delighted* with its new trick’ (p. 223).

‘They enjoyed the joke together, and the table shook *as if laughing*’ (p. 224).

If Sir Oliver Lodge has no better sense than to write such stuff as this, to send it to the Press, to correct the proofs, and to read it again in the revise, has he no judicious friend who will point out to him the effect of it on his reputation for—I was going to say sanity, but will soften it to common sense? What reliance can be placed on the judgment, on the common sense, on the interpretation of facts, on the inferences, of a man who can write and publish such things?

4. There is yet another feature in Mrs. Piper’s performances, not characteristic of hers alone, but shared with hers by those of all other mediums who practise for any length of time. They develope. They improve with

practice. They alter as time goes on, and the later performances are much superior to the earlier. This has been noticed by Sir Bryan Donkin, who says in *Bedrock* (January, 1913):

‘It is remarkable how comparatively little is heard in public now of the so-called “physical” phenomena of spiritualism, such as movements of pieces of furniture, “materialization” and tangibility of human forms, etc., as compared with the dominant importance attributed to “telepathy” and “automatic writing”. . . The more frequently instances of some classes of “occult” phenomena have been confessedly proved to be due to misconception or to manifest trickery, the more such classes are neglected or ignored, essential though they were to the spiritualistic propaganda of the not far distant past, and the more stress is laid on other kinds of alleged phenomena that have been less often actually and severally demonstrated to be due to similar origins. The chief evidential stand-by in the matter of the “supernormal,” consists now of alleged facts the establishment of which would not be out of harmony with some spiritual philosophies of the day.’ So do conjurers try new tricks when the old ones become stale.

Mrs. Piper began with trance-utterances. She went into a trance, and in that trance would talk volubly, with a manner and voice quite different from her ordinary manner and voice ‘on details concerning which she has had no information given her.’ Here Sir Oliver Lodge testifies to what he does not know. He may know that he himself has not voluntarily and intentionally given information to Mrs. Piper, but he cannot know that no one else has given her information, nor can he be sure that he has not himself involuntarily and unintentionally given to her indications from which she or her familiar spirit could make a shrewd guess. However, at first she speaks; later on she writes, writes with the hand that appears to listen; that is full of intelligence; that turns itself to the sitter when it wants to be spoken to by him; that directs

itself to this quarter or that when it wants further information ; that becomes tremendously pleased, and ' gives the impression ' of a person dancing round the room with delight, and with the delight of having accomplished something. What wonder that such a hand can write portents and marvels !

Then, too, at first Dr. Phinuit fishes and guesses, and ' ekes out the scantiness of his information from the resources of a lively imagination.' Sir Oliver Lodge absolves Mrs. Piper from all share in these questionable methods. It is Dr. Phinuit alone that is responsible. And Dr. Phinuit is a cunning old person. From the description of him I should judge that Sir Oliver Lodge would be a mere child in his hands. He would be as clay in the hands of the potter. What Sir Oliver Lodge means by fishing on the part of Dr. Phinuit is thus described: ' The utilization of trivial indications, of every intimation—audible, tactile, muscular—and of little shades of manner too indefinable to name ; all these excited in the sitter by skilful guesses and well directed shots, and their nutriment extracted with superhuman cunning.' ' Whenever his supply of information is abundant, there is no sign of the fishing process.' Surprising ! ' At other times it is as if he were in a difficult position—only able to gain information from very indistinct or inaudible sources, and yet wishful to convey as much information as possible. The attitude is then as of one straining after every clue, and making use of the slightest indication, whether received in normal or abnormal ways.' For my part, I should profoundly distrust a witness who professed to give me information from supernatural sources, and yet had recourse to dodges of this kind, but Sir Oliver Lodge is more confiding. He is able to ' assert with entire confidence that, pressing the ingenious-guessing and unconscious-indicative hypothesis to its utmost limit, it can only be held to account for a very few of Dr. Phinuit's statements.' But why should it have to account for any ? Natural causation I can understand, and miracle I can understand ; but a

miracle that is only half a miracle and needs to be eked out by natural means beats me, I must confess. Dr. Phinuit has miraculous sources of information, but his miracles sometimes hang fire, and have to be supplemented by guessing, by fishing, and by the resources of a lively imagination. As he is undoubtedly a genuine person performing honest miracles, it seems a pity that he should go out of his way to imitate the methods of the impostor. However, in spite of this we must not suspect him, for Sir Oliver Lodge does not hesitate to assert confidently that *thought transference is the most commonplace explanation to which it is possible to appeal.* (Italics in original.) Yes ; but then Sir Oliver Lodge does not hesitate to assert the same thing confidently of the performances of Miss E. and Miss R., and of the performances of the two German girls ; and he is indignant with Blackburn, not for being an impostor, but for confessing his imposture. With every respect for the ' scientific belief ' of Sir Oliver Lodge, for his lack of hesitation, and for his assertion, we must ask for whole miracles and invariable miracles ; miracles that are only half miracles, or sometimes miracles and sometimes not, are not convincing unless one is determined to believe in spite of everything.

As Phinuit, or Mrs. Piper, I think we may as well give him his proper name, becomes more and more intimate with the Lodge family, the skilful guesses and well-directed shots either become fewer, or they become more skilful and better directed, for mistakes are better avoided, and ' fishing ' becomes less conspicuous. Or is it that the Lodge family becomes more confiding, and ceases to observe the mistakes ? It seems to be scarcely possible. Rector, who succeeds Dr. Phinuit, does not appear to fish. The experience is strongly reminiscent of the cross-examination of the Tichborne Claimant. When first Sir John Coleridge took him in hand, his answers were preposterously, egregiously, and enormously wrong ; but Sir John Coleridge was not a skilful cross-examiner, and every time that Orton gave a wrong answer, counsel corrected him,

introducing his correction with the phrase 'Would you be surprised to hear' so-and-so, telling the witness the true state of affairs. The consequence was that as time went on, the witness came to be as well posted in the ins and outs of the affairs of the Tichborne family as Sir John Coleridge himself; he took the length of his adversary's foot, and it became more and more difficult to catch him. Dr. Phinuit, like Arthur Orton, at first committed himself to very definite statements, in which it was easy to catch him if he went wrong, but Rector, and Dr. Hodgson who followed Rector, are much more cautious. Here is an interview with apparently both of them (p. 60):

Sitting on Dec. 28th, 1905. At this sitting Rector had been writing, when the hand dropped the pencil and worked convulsively several seconds in a very excited manner.

Miss P. What is the matter?

[The hand, shaking with apparently great excitement, wrote the letter H. . . . bearing down so hard on the paper that the point of the pencil was broken. It then wrote 'Hodgson.']

Miss P. God bless you!

[The hand writes 'I am'—followed by rapid scrawls, as if regulator of machine were out of order.]

Miss P. Is this my friend?

[Hand assents by knocking five times on paper-pad.]

(RECTOR.) Peace, friends, he is here, it was he, but he could not remain, he was so choked. He is doing all in his power to return . . . Better wait for a few moments until he breathes freer again.

Miss P. I will.

(R.) Presently he will be able to conduct all here.

Miss P. That is good news.

(R.) Listen. Everything is for the best. He holds in his hand a ring. . . . He is showing it to you. Cannot you see it, friend?

MISS P. I cannot see it. Have him tell me about it.

(R.) Do you understand what it means?

MISS P. I know he had a very attractive ring.

(R.) Margaret.

There is nothing in this that can be verified or disproved. It is perfectly safe. I could do it myself without the slightest risk of being found out.

I will now leave Mrs. Piper. It is impossible to go through all her performances. Those that I have examined are a fair sample of the rest. If anyone still doubts, and really desires to get at the truth and not merely to bolster up a belief that he is determined to maintain at any cost, I bid him examine the other accounts in a spirit of healthy but fair scepticism. Let him not be content to pay lip-service to the spirit and the methods of scientific investigation and then fling them to the winds before he begins his investigations; let him not be misled by Sir Oliver Lodge's specious references to 'minds fortified against the intrusion of unwelcome facts.' How does he know that they are unwelcome? Facts of the kind would be very welcome to me if I could be assured that they were facts; but when Sir Oliver Lodge calls them facts he begs the whole question in dispute; and at the very outset of his investigations, on the second page of his book, he assumes the truth of what he has yet to prove. Thus does a 'scientific man' flout the ways of science when he leaves his own special department. Let the cobbler stick to his last, the electrician to his batteries and coils and dynamos. Above all, let the investigator not allow himself to be overborne and bullied into acceptance by the weight of authority. The scientific method knows nothing of authority. It knows only evidence and reason. Once accept authority against evidence, and you have placed your feet upon a slippery slope on which you will find no

foothold until you are precipitated into the bottomless pit of absurdity. Let me give an instance or two.

For six thousand years, a time of whose duration we can scarcely form a definite conception, the whole of mankind in Europe and in great part of Asia believed, upon the assertion of authority alone, that the position of the planets, and especially of the moon, influences and regulates the course of human lives, and the fortunes and misfortunes to which human beings are subject. In the long history of judicial astrology, extending over six thousand years, it scarcely ever occurred to anyone to ask the crucial question, 'What opportunity have the asserters of knowing whether their assertions are true? What is the evidence on which their belief is founded?' Moreover, never did anyone test whether conduct founded on the belief led to experiences inconsistent with the belief; or if they did, these experiences were powerless against the overwhelming efficacy of authority.

Who believes now in judicial astrology? A few poor creatures who are regarded by their fellows with contempt for their credulity, or with curiosity as mental freaks.

For more than a thousand years the paramount authority in medicine was the authority of Galen. The books of Galen were the medical Bible. What Galen said no man dared gainsay. Galen thought that the arteries carry the vital spirit from the heart to all parts of the body; and if this is so, there must be a hole in the septum of the heart to allow the spirit to pass from the arteries of the lungs into the arteries of the rest of the body. He taught, therefore, that there is such a hole, and for fourteen hundred years anatomists believed him, and in spite of the plain evidence of their senses, followed his teaching, and believed that a hole is there, although they could not find it; so strong is the power of authority. He taught also that the veins carry the blood *from* the heart, and so sure were anatomists that he must be right, that when a valve was found in the azygos vein, a valve which effectually prevents the blood in that vein from flowing away from the heart, they

again refused to believe the evidence of their senses, and declared that the valve operates in the direction the reverse of that in which they saw it operate.

For nearly as long, authority has said that insanity is disorder of mind, and disorder of mind is insanity. In vain I have pointed out that there are many disorders of mind that are not insane, and that there is much in insanity besides disorder of mind. Reason, observation, experience, the plain evidence of the senses, are powerless against authority. What it has said, that it continues to say, and that it will continue to say to the end of time. In vain it is asserted, in vain it is proved, that what a man says and does is alone enough to prove his insanity, which also cannot be proved without this evidence. Authority says it is not, and what authority says prevails.

The power of authority is thus extremely potent even at the present day, and even in scientific matters. In this very subject of telepathy, or spiritualism, or witchcraft, or miracles, that we are now considering, it is still invoked, and is still successfully invoked. Hear Sir Conan Doyle :

‘ The days are past when the considered opinions of such men as Crookes, Wallace, Flammarion, Lodge, Barrett, Generals Drayson and Turner, Sergeant Ballantyne, W. T. Stead, Judge Edmunds, Vice-Admiral Osborne Moore, the late Archdeacon Wilberforce, and such a cloud of other witnesses, can be dismissed with empty-headed “ all rot ” formula.’—*Light*, Nov. 4th, 1916.

Does Sir Conan Doyle really hope to convince us by citing this meagre list of authorities? If they are decisive, how is it possible to withhold our confidence in Dr. Mainauduc, a notorious quack who flourished in Bristol towards the end of the eighteenth century. Not only professors and lawyers and such inferior judges, but people of the highest quality flocked from London to Bristol to submit to his treatment. They included one duke, one duchess, one marchioness, two countesses, one earl, one

baron, three baronesses, one bishop, five right honourable gentlemen and ladies, two baronets, seven members of parliament, one clergyman, two physicians, seven surgeons, besides ninety-two gentlemen and ladies of respectability. What a poor show do Sir Conan Doyle's authorities make beside this cloud of witnesses ! Not a baron amongst them, let alone an earl ; and as for a duke—why, there is not even one poor baronet ! Really, Sir Conan Doyle, I can show a better array than yours of believers in Christian Science, or in the dire consequences of spilling the salt. But perhaps you believe in these also.

If Sir Conan Doyle understood what scientific method means, and what the spirit of science is, he would be ashamed to adduce authority at all in support of that which ought to rest on evidence and reason alone ; and if he understood what may and what may not be accepted on authority, he would be ashamed to adduce, on the ground that they are well known, the names of men as authorities in a subject of which they have no special qualifications for judging.

Let anyone who cares to investigate any of Sir Oliver Lodge's other examples remember that Sir Oliver Lodge is testifying at second-hand, and that *neither he nor his witness has been cross-examined*. Let him remember that there are three alternative hypotheses. The phenomena, supposing them to be accurately recorded, may be due to spooks or ghosts telepathizing, or they may be due to witchcraft, or they may be due to natural causes ; and that the two former hypotheses are not to be entertained until the last is ruled out, and shown to be impossible. Let him remember that much of the evidence adduced would be scouted in a court of law, much more in a scientific laboratory ; and that evidence purporting to prove what is miraculous should be subjected to scrutiny not less rigorous but more rigorous than that which is adduced to prove what is known to be possible by the operation of known laws of nature. It is thus, and not by relying on authority, however eminent, that he will approximate to the truth.

Let him remember that hearsay evidence obtained at second, third, and fourth-hand becomes less and less reliable, almost in geometric ratio, with the number of hands or heads it passes through. The maxim is trite, and is acted on by everyone in the ordinary affairs of daily life; but in these matters of miracle, in which minute accuracy is of the utmost importance, it is ignored altogether by Sir Oliver Lodge. In ordinary mundane affairs, who would rely, in a matter of any importance, on what A says that B told him? One of Sir William Jenner's favourite maxims was 'Never believe what your patient tells you his doctor said.' Even in a matter in which they are so vitally interested as their own health, people cannot be trusted to give a correct account of what they have heard. It is notorious that few can repeat with accuracy a statement of any length, and every alteration of a word, every substitution of one word for another, every addition and omission alters the sense. And if it is unsafe to depend on second-hand testimony for what Dr. Brown said to his patient, what reliance can we place on what Sir Oliver Lodge says Mrs. Piper says the ghost of Rector says the ghost of Dr. Hodgson says? We have Sir Oliver Lodge's word for it that Mrs. Piper does not always speak distinctly; we have Mrs. Piper's word that Rector does not always speak distinctly; we have Rector's word that Dr. Hodgson does not always speak distinctly. What their several powers of hearing may be, we do not know. We know that Dr. Phinuit at any rate is not always an honest witness. What guarantee have we for Rector's and Dr. Hodgson's honesty? What guarantee have we of Mrs. Piper's honesty? Would any man of ordinary prudence buy a box of matches, or believe that it is raining, on the strength of such evidence? Sir Oliver Lodge founds a religion upon it, and believes in miracles on the strength of it: and he asks the world to adopt his religion and to believe in his miracles. The English language is a language of extraordinary force and vigour, but it does not contain words strong enough to express my

opinion of Sir Oliver Lodge's attempt, or of his powers of estimating the worth of testimony and of interpreting evidence.

If Sir Oliver Lodge testifies that a thing happened, it is a fact that he testifies. It is not necessarily a fact that it happened. He constantly complains that the obscurantist men of science will not accept his interpretation of the facts: he persistently ignores the objection of men of science that what he calls facts are not established as facts. They are for the most part hearsay, or they are interpretations of fact. This objection he will not face; at any rate, he does not face it. It has been brought to his knowledge times out of number, but he takes no notice of it.

He demands that we shall accept, not only the interpretation that he puts upon what he thinks he has himself observed, but the interpretation he puts on what other people say they have observed, and what other people say that yet other people say they have observed; and he regards this third and fourth-hand evidence as good enough to establish the miraculous nature of the alleged events. Moreover, he adopts an attitude of haughty superiority towards those who do not think this evidence good enough. He pities their ignorance and despises them.

For my part, when I find a fact, supposing it to be a fact, susceptible of two alternative interpretations, either that it is due to a miracle or that it is due to natural causes, I do not jump to the conclusion that it must be due to a miracle. When I see plainly that the conditions were such that it is easily explainable by natural causes, that natural causes could have been in action, and if they were in action are amply sufficient to account for the result, I do not feel compelled to believe that the event must have been miraculous, or supernormal, as Sir Oliver Lodge prefers to call it. I refuse to admit the occurrence of a miracle until it is clearly proved that natural causes could not have acted, or if they could, were insufficient to account for the result. Up to the present, Sir Oliver Lodge has not proved

this. Up to the present, he has not come within a thousand miles of proving it. Up to the present, he has not adduced evidence that would satisfy a third year's student in medicine, or in any science that imparts a training in the assignment of natural causes. Every one of his stories is on a level with the tales of witchcraft told by Matthew Hopkins, and is entitled to as much credence and no more.

I conclude as I began, by quoting Occam's razor:
MIRACLES ARE NOT TO BE PRESUMED UNTIL
NATURAL CAUSES HAVE BEEN RULED OUT.

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CLERGYMEN, SCHOOLMASTERS, LECTURERS ;
MEN OF BUSINESS ;
WRITERS OF ADVERTISEMENTS ;
WRITERS OF THESES FOR UNIVERSITY DEGREES ;
CANDIDATES FOR EXAMINATION ;
And all who would write clear, unambiguous, accurate,
vigorous, persuasive English.

No people on earth possesses so perfect an instrument
for the expression of thought as the English-speaking
peoples ; and no people on earth is so careless, so slovenly,
so inefficient in the use of its language as the English.

Incompetence in the use of the English tongue is notorious, is widespread, and is disastrous.

It is notorious.

The language put into the mouth of the King at the opening and closing of Parliament is a standing jest for the incorrectness of its composition.

The English version of the Pronouncement of the Allies, proclaiming to the world their aims in the great war now raging, called forth, even from the daily Press, animadversion on its faulty English.

The judges are constantly complaining, with monotonous and wearisome reiteration, that the Acts of Parliament they have to administer are so badly worded that it is very often impossible to discover their true meaning ; yet the Parliamentary draughtsmen should be the very experts of experts in the Art of Expression. The last Bill that has been brought into the House of Commons at the time of writing this, a Bill presented to the House by the Minister of Education himself, contains the same blunder twice in the first clause of three lines in length.

The *Spectator*, a journal that seeks, and seeks in vain, to inculcate a high standard in the writing of English, calls special attention to the fault of the Government in allowing ' forms, regulations, announcements, proclamations, and thousands of other publications to go forth in which there are ambiguities and tautologies, and such vulgar abuses of the English tongue as readers are warned against in every textbook on the elements of literary construction.' 'Bad English appears in every kind of official publication.' The *Spectator* gives several instances of important official publications in which the writers have used expressions that are either obscure, ambiguous, uncertain, or even the reverse of the meaning that must have been intended, and suggests as a remedy the appointment of a Grand Editor to the Nation, whose duty it shall be to see that all Government publications are at least intelligible, so that offenders shall not be liable to be prosecuted for the breach of regulations that neither they nor anyone else can understand.

Incompetence in the use of the English tongue is widespread. It is almost universal. The teaching of English in our Schools and Universities is so utterly neglected or so utterly incompetent that ability to express thought accurately and clearly in English is become a very rare accomplishment. In addition to the evidence already adduced, consider this :

Five or six years ago the graduates of the University of London, in Convocation assembled, formulated a resolution, discussed it at length, had it put from the Chair, passed it, and published it next morning in all the newspapers ; and this resolution expressed the direct reverse of the meaning its authors intended it to express. It was intended to express a censure upon the Government for its conduct towards schoolmasters, and was couched in terms of considerable severity, yet so ignorant and unskilful were its authors in the art of expressing thought in the English tongue, that the resolution was so worded as to express this censure, not upon the Government, but upon the very schoolmasters themselves who formulated it, discussed it, passed it, and published it. For the graduates who achieved this triumph of incompetence were schoolmasters or schoolmistresses, or were engaged in the profession of teaching. They were not unlettered, uncultured holders of degrees in Science, or Medicine, or Commerce, or Engineering : they were graduates in Arts, the Arts degrees of the London University being highly valued as a recommendation to the more important positions in the profession of teaching. Not one of these graduates but would have been considered disgraced, and would have felt himself disgraced, if the resolution had been in the Latin tongue and had contained an equivalent blunder. Not one of them would have been capable of making such a blunder in Latin. But the study of English is so neglected, and is regarded as of so little importance, that not only was it possible to make the blunder and for all these University graduates to overlook it, but even when it was pointed out by a graduate in Medicine, no outcry arose for the teaching of English : none of the graduates felt

himself disgraced: the matter was passed over with a shrug and a laugh as of no importance at all.

The daily newspapers, one and all, from the mighty *Times* to the *Little Pedlington Gazette*, call the daily reports issued by the belligerents in this war *communiqués*. They are so ignorant of the resources of their own tongue that they are obliged to borrow from the French a word that has several equivalents in English. There is no reason but ignorance why the equivalent expression, announcement, account, or bulletin, or the nearly equivalent and equally appropriate expression, report, description, statement, notice, notification, relation, or proclamation should not be used. Yet we have been fed daily for three years upon *communiqués*.

The rarity of the ability to write good English is notorious and widespread. It is well recognized and universally admitted. It is also disastrous.

It is intolerable to live under laws that are unjust: it is worse to live under laws that are uncertain; and the wording of Acts of Parliament is such that their true meaning remains uncertain until it has been declared by a long series of decisions extending over years. The time of all the Courts of Law is very largely occupied in deciding the meaning of deeds, agreements, contracts, wills, settlements, and other documents whose meaning ought not to be open to doubt, and would not be open to doubt if it were properly expressed. The simple-minded citizen is apt to suppose that if a document is prepared by a solicitor duly qualified to practise, and settled by a barrister duly called to the Bar or within the Bar, that document may be relied upon as the true expression of the mind of the person who executes it, and as an accurate, clear, unambiguous statement of his meaning. If ever he has to enforce it by process of law, he is pretty sure to discover that he has been grossly mistaken; for however learned his professional advisers may be in the law, the chances are dead against their being able to utilize their learning to the best effect by expressing it in precise and unambiguous English.

It is no exaggeration to say that if lawyers were properly trained in the Art of Expression, many thousands of pounds would be saved to litigants every year, fewer judges would be needed, and the law's delay would be sensibly diminished.

It is perhaps in legal business that the common inability to express thought in English is most severely felt ; but it is felt severely in all businesses. The lawyer is often to blame for the inaccurate expression of his own thought, but often he is the innocent victim of the inaccurate expression of his instructions. When he receives instructions in writing, how often can he act upon them without requiring the elucidation of some obscure expression in the instructions received from his client ? And if his client writes obscurely on such an occasion, be sure that he writes obscurely on others. The business communications of business men are full of obscurities and ambiguities : much time is wasted in the correspondence necessary to clear up these obscurities and resolve the ambiguities ; and in business, waste of time is disastrous. While time is wasted the market is missed.

In one day (May 26th, 1917) five defendants in two different police courts pleaded, as an excuse for contravening a Government regulation, that the regulation was unintelligible ; and the magistrates allowed the pleas. With what face can a Government Department punish a subordinate, or the police prosecute a citizen, for not complying with a regulation that is unintelligible, or that may be construed in more than one sense ? Yet how seldom are the instructions and regulations of Government Departments unmistakably clear ! If this is the case with official writings, drafted with care, revised by one official after another, copied in the office, sent to the Press, corrected in the proof, examined in the revise, and scrutinized by the printer's reader, himself presumably an expert, what is to be expected of the unaided productions of the private author ? What is to be expected is what we find, that is to say, blunders so serious and so frequent that they puzzle and annoy the reader, and distract his attention

from the matter expressed. If he does not actually throw the book aside in disgust, as he is often tempted to do, he rises from it fatigued and confused, with no clear notion of what the meaning is.

In many writings, especially writings on abstruse subjects, there is often no meaning at all, and the reader is so habituated to the use of faulty expression, and so unpractised in analysing expressions to discover their meaning, that the want of meaning passes for profundity, and the modest and diffident reader blames his own lack of intelligence instead of blaming the incompetence of the writer.

It matters not what the province of the writing may be, whether it is philosophy, science, art, history, biography, fiction, or what not, the same pervading fault permeates them all ; and some of the writers who have the greatest reputation are among the worst offenders. These are the writers whose style is said to attain ' distinction.' A style of writing that distracts the reader's attention from the matter and attracts it to the manner of expression is a faulty and vicious style. Even if it is grammatically and syntactically faultless, such a style is vicious. The medium of expression should be completely translucent, and though the ornamentation of the glass may be itself beautiful, it is out of place and wrong if it obscures our vision of what we want to see through it. Such ornamentation is to be admired in writing that is professedly ornamental, and expresses emotion, as in poetry ; but in writing that is intended to express thought it is out of place : it is vicious and wrong.

When we consider that readers now comprise the whole population of these islands ; and when we consider the aggregate amount of time spent by them all in reading, and the large proportion of this time that is wasted in trying to extract meanings that are obscurely expressed ; and when we consider also the habit of slipshod thought that is engendered by reading slipshod writing, it is strictly moderate to assert that the common English ignorance of the Art of Expression is disastrous.

The Course of Instruction in the Art of Expression of Thought is designed to supply that teaching that is unobtainable in any of our Schools or Universities. It is designed to teach the writer to express his thoughts in clear, accurate, vigorous, persuasive English. It is written by a master in the art of expression, who is also a deep analytical thinker, and is able to trace the movement of the mind in the reception and expression of thought, so as not only to lay down rules for proper expression, but also to show the psychological principles on which the rules are founded. Thus, the rules are not arbitrary or conventional: they rest upon solid grounds of reason; and the ground is in every case clearly demonstrated. By this method the rules are all interconnected, and as the principles on which they are based are few and plain, both they and the rules are easily remembered.

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It does not formally teach the art of thinking: that is the subject of another Course. But by teaching clear expression, it does materially aid clear thinking, for thought becomes clear in course of being expressed clearly. Much of the value of clear expression lies in the compulsion it puts upon the writer to think clearly. Muddy expression is an infallible indication of muddy thought. Clear expression indicates clarity of thought, and assists clarity of thought.

The Course does not teach rhetoric: it teaches only the logical expression of thought.

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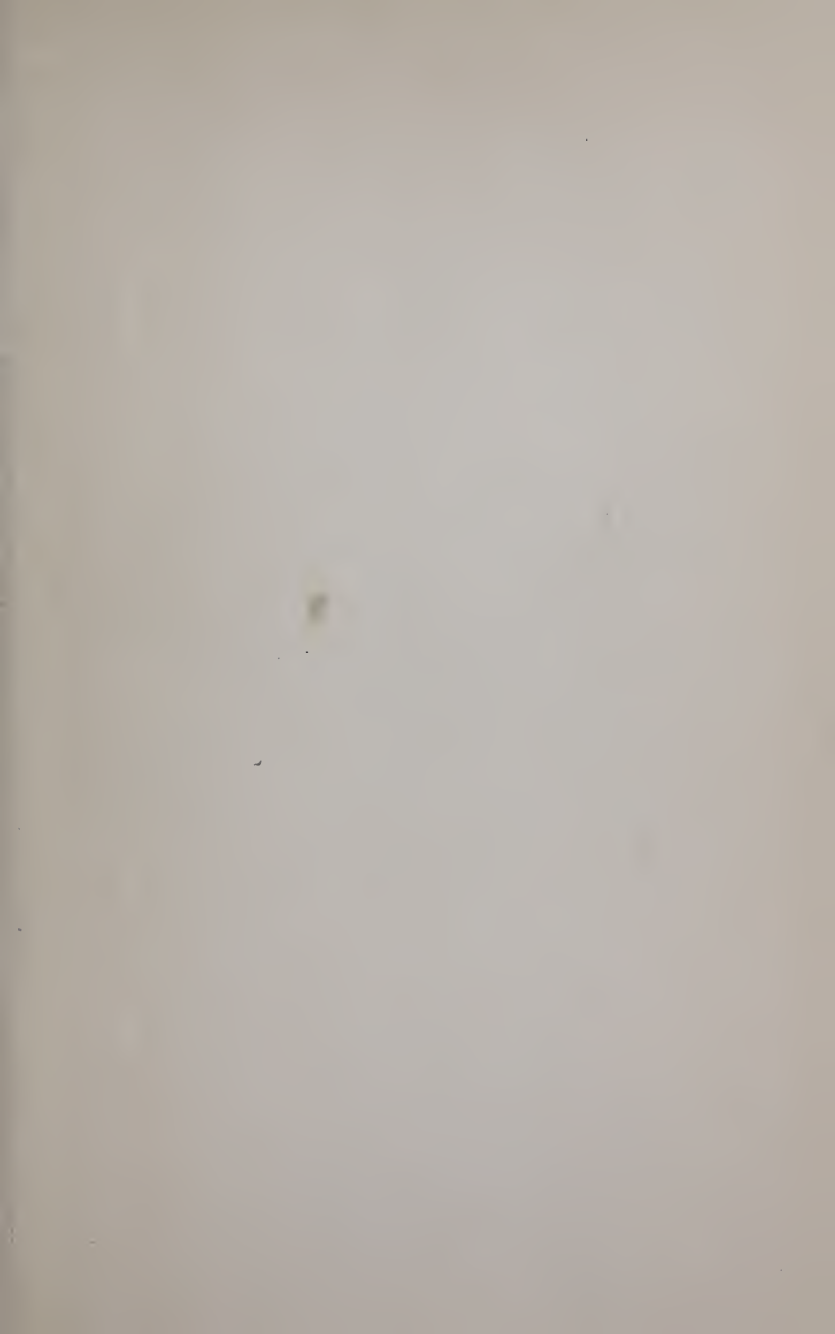
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3832, 3854, 3876, 3898, 3920, 3942, 3964, 3986, 4008, 4030, 4052, 4074, 4096, 4118, 4140, 4162, 4184, 4206, 4228, 4250, 4272, 4294, 4316, 4338, 4360, 4382, 4404, 4426, 4448, 4470, 4492, 4514, 4536, 4558, 4580, 4602, 4624, 4646, 4668, 4690, 4712, 4734, 4756, 4778, 4800, 4822, 4844, 4866, 4888, 4910, 4932, 4954, 4976, 4998, 5020, 5042, 5064, 5086, 5108, 5130, 5152, 5174, 5196, 5218, 5240, 5262, 5284, 5306, 5328, 5350, 5372, 5394, 5416, 5438, 5460, 5482, 5504, 5526, 5548, 5570, 5592, 5614, 5636, 5658, 5680, 5702, 5724, 5746, 5768, 5790, 5812, 5834, 5856, 5878, 5900, 5922, 5944, 5966, 5988, 6010, 6032, 6054, 6076, 6098, 6120, 6142, 6164, 6186, 6208, 6230, 6252, 6274, 6296, 6318, 6340, 6362, 6384, 6406, 6428, 6450, 6472, 6494, 6516, 6538, 6560, 6582, 6604, 6626, 6648, 6670, 6692, 6714, 6736, 6758, 6780, 6802, 6824, 6846, 6868, 6890, 6912, 6934, 6956, 6978, 7000, 7022, 7044, 7066, 7088, 7110, 7132, 7154, 7176, 7198, 7220, 7242, 7264, 7286, 7308, 7330, 7352, 7374, 7396, 7418, 7440, 7462, 7484, 7506, 7528, 7550, 7572, 7594, 7616, 7638, 7660, 7682, 7704, 7726, 7748, 7770, 7792, 7814, 7836, 7858, 7880, 7902, 7924, 7946, 7968, 7990, 8012, 8034, 8056, 8078, 8100, 8122, 8144, 8166, 8188, 8210, 8232, 8254, 8276, 8298, 8320, 8342, 8364, 8386, 8408, 8430, 8452, 8474, 8496, 8518, 8540, 8562, 8584, 8606, 8628, 8650, 8672, 8694, 8716, 8738, 8760, 8782, 8804, 8826, 8848, 8870, 8892, 8914, 8936, 8958, 8980, 9002, 9024, 9046, 9068, 9090, 9112, 9134, 9156, 9178, 9200, 9222, 9244, 9266, 9288, 9310, 9332, 9354, 9376, 9398, 9420, 9442, 9464, 9486, 9508, 9530, 9552, 9574, 9596, 9618, 9640, 9662, 9684, 9706, 9728, 9750, 9772, 9794, 9816, 9838, 9860, 9882, 9904, 9926, 9948, 9970, 9992, 10014, 10036, 10058, 10080, 10102, 10124, 10146, 10168, 10190, 10212, 10234, 10256, 10278, 10300, 10322, 10344, 10366, 10388, 10410, 10432, 10454, 10476, 10498, 10520, 10542, 10564, 10586, 10608, 10630, 10652, 10674, 10696, 10718, 10740, 10762, 10784, 10806, 10828, 10850, 10872, 10894, 10916, 10938, 10960, 10982, 11004, 11026, 11048, 11070, 11092, 11114, 11136, 11158, 11180, 11202, 11224, 11246, 11268, 11290, 11312, 11334, 11356, 11378, 11400, 11422, 11444, 11466, 11488, 11510, 11532, 11554, 11576, 11598, 11620, 11642, 11664, 11686, 11708, 11730, 11752, 11774, 11796, 11818, 11840, 11862, 11884, 11906, 11928, 11950, 11972, 11994, 12016, 12038, 12060, 12082, 12104, 12126, 12148, 12170, 12192, 12214, 12236, 12258, 12280, 12302, 12324, 12346, 12368, 12390, 12412, 12434, 12456, 12478, 12500, 12522, 12544, 12566, 12588, 12610, 12632, 12654, 12676, 12698, 12720, 12742, 12764, 12786, 12808, 12830, 12852, 12874, 12896, 12918, 12940, 12962, 12984, 13006, 13028, 13050, 13072, 13094, 13116, 13138, 13160, 13182, 13204, 13226, 13248, 13270, 13292, 13314, 13336, 13358, 13380, 13402, 13424, 13446, 13468, 13490, 13512, 13534, 13556, 13578, 13600, 13622, 13644, 13666, 13688, 13710, 13732, 13754, 13776, 13798, 13820, 13842, 13864, 13886, 13908, 13930, 13952, 13974, 13996, 14018, 14040, 14062, 14084, 14106, 14128, 14150, 14172, 14194, 14216, 14238, 14260, 14282, 14304, 14326, 14348, 14370, 14392, 14414, 14436, 14458, 14480, 14502, 14524, 14546, 14568, 14590, 14612, 14634, 14656, 14678, 14700, 14722, 14744, 14766, 14788, 14810, 14832, 14854, 14876, 14898, 14920, 14942, 14964, 14986, 15008, 15030, 15052, 15074, 15096, 15118, 15140, 15162, 15184, 15206, 15228, 15250, 15272, 15294, 15316, 15338, 15360, 15382, 15404, 15426, 15448, 15470, 15492, 15514, 15536, 15558, 15580, 15602, 15624, 15646, 15668, 15690, 15712, 15734, 15756, 15778, 15800, 15822, 15844, 15866, 15888, 15910, 15932, 15954, 15976, 15998, 16020, 16042, 16064, 16086, 16108, 16130, 16152, 16174, 16196, 16218, 16240, 16262, 16284, 16306, 16328, 16350, 16372, 16394, 16416, 16438, 16460, 16482, 16504, 16526, 16548, 16570, 16592, 16614, 16636, 16658, 16680, 16702, 16724, 16746, 16768, 16790, 16812, 16834, 16856, 16878, 16900, 16922, 16944, 16966, 16988, 17010, 17032, 17054, 17076, 17098, 17120, 17142, 17164, 17186, 17208, 17230, 17252, 17274, 17296, 17318, 17340, 17362, 17384, 17406, 17428, 17450, 17472, 17494, 17516, 17538, 17560, 17582, 17604, 17626, 17648, 17670, 17692, 17714, 17736, 17758, 17780, 17802, 17824, 17846, 17868, 17890, 17912, 17934, 17956, 17978, 17998, 18020, 18042, 18064, 18086, 18108, 18130, 18152, 18174, 18196, 18218, 18240, 18262, 18284, 18306, 18328, 18350, 18372, 18394, 18416, 18438, 18460, 18482, 18504, 18526, 18548, 18570, 18592, 18614, 18636, 18658, 18680, 18702, 18724, 18746, 18768, 18790, 18812, 18834, 18856, 18878, 18900, 18922, 18944, 18966, 18988, 19010, 19032, 19054, 19076, 19098, 19120, 19142, 19164, 19186, 19208, 19230, 19252, 19274, 19296, 19318, 19340, 19362, 19384, 19406, 19428, 19450, 19472, 19494, 19516, 19538, 19560, 19582, 19604, 19626, 19648, 19670, 19692, 19714, 19736, 19758, 19780, 19802, 19824, 19846, 19868, 19890, 19912, 19934, 19956, 19978, 19998, 20020, 20042, 20064, 20086, 20108, 20130, 20152, 20174, 20196, 20218, 20240, 20262, 20284, 20306, 20328, 20350, 20372, 20394, 20416, 20438, 20460, 20482, 20504, 20526, 20548, 20570, 20592, 20614, 20636, 20658, 20680, 20702, 20724, 20746, 20768, 20790, 20812, 20834, 20856, 20878, 20900, 20922, 20944, 20966, 20988, 21010, 21032, 21054, 21076, 21098, 21120, 21142, 21164, 21186, 21208, 21230, 21252, 21274, 21296, 21318, 21340, 21362, 21384, 21406, 21428, 21450, 21472, 21494, 21516, 21538, 21560, 21582, 21604, 21626, 21648, 21670, 21692, 21714, 21736, 21758, 21780, 21802, 21824, 21846, 21868, 21890, 21912, 21934, 21956, 21978, 21998, 22020, 22042, 22064, 22086, 22108, 22130, 22152, 22174, 22196, 22218, 22240, 22262, 22284, 22306, 22328, 22350, 22372, 22394, 22416, 22438, 22460, 22482, 22504, 22526, 22548, 22570, 22592, 22614, 22636, 22658, 22680, 22702, 22724, 22746, 22768, 22790, 22812, 22834, 22856, 22878, 22900, 22922, 22944, 22966, 22988, 23010, 23032, 23054, 23076, 23098, 23120, 23142, 23164, 23186, 23208, 23230, 23252, 23274, 23296, 23318, 23340, 23362, 23384, 23406, 23428, 23450, 23472, 23494, 23516, 23538, 23560, 23582, 23604, 23626, 23648, 23670, 23692, 23714, 23736, 23758, 23780, 23802, 23824, 23846, 23868, 23890, 23912, 23934, 23956, 23978, 23998, 24020, 24042, 24064, 24086, 24108, 24130, 24152, 24174, 24196, 24218, 24240, 24262, 24284, 24306, 24328, 24350, 24372, 24394, 24416, 24438, 24460, 24482, 24504, 24526, 24548, 24570, 24592, 24614, 24636, 24658, 24680, 24702, 24724, 24746, 24768, 24790, 24812, 24834, 24856, 24878, 24900, 24922, 24944, 24966, 24988, 25010, 25032, 25054, 25076, 25098, 25120, 25142, 25164, 25186, 25208, 25230, 25252, 25274, 25296, 25318, 25340, 25362, 25384, 25406, 25428, 25450, 25472, 25494, 25516, 25538, 25560, 25582, 25604, 25626, 25648, 25670, 25692, 25714, 25736, 25758, 25780, 25802, 25824, 25846, 25868, 25890, 25912, 25934, 25956, 25978, 25998, 26020, 26042, 26064, 26086, 26108, 26130, 26152, 26174, 26196, 26218, 26240, 26262, 26284, 26306, 26328, 26350, 26372, 26394, 26416, 26438, 26460, 26482, 26504, 26526, 26548, 26570, 26592, 26614, 26636, 26658, 26680, 26702, 26724, 26746, 26768, 26790, 26812, 26834, 26856, 26878, 26900, 26922, 26944, 26966, 26988, 27010, 27032, 27054, 27076, 27098, 27120, 27142, 27164, 27186, 27208, 27230, 27252, 27274, 27296, 27318, 27340, 27362, 27384, 27406, 27428, 27450, 27472, 27494, 27516, 27538, 27560, 27582, 27604, 27626, 27648, 27670, 27692, 27714, 27736, 27758, 27780, 27802, 27824, 27846, 27868, 27890, 27912, 27934, 27956, 27978, 27998, 28020, 28042, 28064, 28086, 28108, 28130, 28152, 28174, 28196, 28218, 28240, 28262, 28284, 28306, 28328, 28350, 28372, 28394, 28416, 28438, 28460, 28482, 28504, 28526, 28548, 28570, 28592, 28614, 28636, 28658, 28680, 28702, 28724, 28746, 28768, 28790, 28812, 28834, 28856, 28878, 28900, 28922, 28944, 28966, 28988, 29010, 29032, 29054, 29076, 29098, 29120, 29142, 29164, 29186, 29208, 29230, 29252, 29274, 29296, 29318, 29340, 29362, 29384, 29406, 29428, 29450, 29472, 29494, 29516, 29538, 29560, 29582, 29604, 29626, 29648, 29670, 29692, 29714, 29736, 29758, 29780, 29802, 29824, 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